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TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 144

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BRIEFS

LAOS, USSR RADIO AGREEMENT--Vientiane, 18 Dec (KPL)--An agreement on the building of a 150-kilowatt radio broadcasting station for the LPDR was signed in the afternoon of December 17 by the representatives of the Ministry of Propaganda, Information, Culture and Tourism and the Soviet Import-Export Tounous Company [as received]. Signing for the Lao side was Chaleun Vongsam-ang, director general of the Lao National Radio, and for the Soviet side was Sevane, economic counsellor of the Soviet Embassy to Laos. Among those present were Son Khamvanvongsa, deputy minister of propaganda, information, culture and tourism, cadres of the Lao National Radio and staff members of the Soviet Embassy. [Text] [BK181440 Vientiane KPL in English 1058 GMT 18 Dec 80]

'WAFA', 'NOVOSTI' COOPERATION PACT--Beirut, 21 Dec (AFP)--The Palestinian News Agency WAFA and the Soviet News Agency NOVOSTI have signed a cooperation agreement intended to "serve peace and friendship between the peoples," WAFA reported here. The aim was to develop existing cooperation between the Palestine Liberation Organisation (PLO) and the Soviet Union, WAFA said. [Text] [NC210836 Paris AFP in English 0829 GMT 21 Dec 80]

DPRK, LIBYAN NEWS AGENCIES AGREEMENT--Pyongyang, 19 Dec (KCNA)--An agreement on the exchange of news and cooperation between the KOREAN CENTRAL NEWS AGENCY and the LIBYAN NEWS AGENCY was signed in Tripoli, Libya, on December 14, according to a report. It was signed on our side by the DPRK Ambassador to Kibya and on the opposite side by the general director of the LIBYAN NEWS AGENCY. [Text] [SK190526 Pyongyang KCNA in English 0329 GMT 19 Dec 80]

USSR, SRV TV, RADIO COOPERATION--A ceremony was held on 8 December in Moscow for signing a document on cooperation in television and radio broadcasting between the Soviet State Committee for Television and Radio Broadcasting and the SRV Council of Ministers' Radio and Television Commission for the 1981-1982 period. Particular attention will be given to reporting on the forthcoming 26th CPSU Congress. It is planned that the exchange of television and radio materials will continue to be developed. These materials are to reflect the two countries' achievement in communist and socialist construction and the unshakable friendship and cooperation between the USSR and Vietnam (?such as) in the use of space communications means. Comrade Lapin, chairman of the Soviet State Committee for Television and Radio Broadcasting, and Comrade Tran Lam, chairman of the Vietnam Radio and Television Commission, signed the aforementioned document. [Text] [OW101655 Moscow in Vietnamese to Vietnam 1430 GMT 8 Dec 80]

CSO: 5500

BRIEFS

'ANTARA'-'PTI' SATELLITE LINK--New Delhi, 27 Nov (AFP)--The Indian News Agency PTI and the Indonesian News Agency ANTARA have begun exchanging news on a direct 24-hour satellite circuit, PTI announced today. The link is the first of its kind established between India and Southeast Asia, the agency said. It added that the link was part of PTI's programme of expansion of its foreign service as well as the non-aligned news pool operations. PTI recently signed a contract with the New China News Agency, XINHUA, in Beijing for exchange of the news services. [Text] [BK271340 Hong Kong AFP in English 1302 GMT 27 Nov 80]

DPRK, INDIAN NEW AGENCIES PACT--Pyongyang, 19 Dec (KCNA)--An agreement on the exchange of news and cooperation between the KOREAN CENTRAL NEWS AGENCY and the PRESS TRUST OF INDIA was signed on December 16 in New Delhi, according to a report. It was signed on our side by Kim Song-kol, general director of the KOREAN CENTRAL NEWS AGENCY, and on the opposite side by N.R. Chandran, general director of the PRESS TRUST OF INDIA. [Text][SK190527 Pyongyang KCNA in English 0331 GMT 19 Dec 80]

CSO: 5500

FIRST OF PLANNED SATELLITE EARTH STATIONS OPENS

New Dimension in Communications

Bombay THE TIMES OF INDIA in English 15 Nov 80 p 9

[Text] New Delhi, November 14:

India's communications network acquires a new dimension with the formal commissioning by the Prime Minister tomorrow of the first of earth stations linked with a geostationary satellite for domestic circuits.

An 11-metre-diameter antenna, directed towards the satellite placed at a distance of 35,000-km. in space, and a 40-metre high microwave tower form the core of equipment at the earth station at Sikandarabad, near Bulandshahr, Uttar Pradesh.

The breakthrough in communications these signify is heightened by the fact that such remote and inaccessible places like Kavaratti in the Lakshadweep Islands, Leh in Ladakh, Aizawl in Mizoram and Port Blair in the Andamans can now be contacted in a matter of minutes by telephone.

The earth stations will transmit and receive messages via the satellite, Intelsat IV, hired from the U.S. for the purpose for five years. Hopefully, before the end of the period India will place its own satellite, INSAT in orbit for communications at home and abroad.

In fact, the commissioning of the earth stations at Sikandarabad and another near Madras marks a big leap forward in the direction of the proposed establishment of 28 earth stations within three years and in time for the launching of INSAT.

These 28 stations. classified according to size as main, primary and remote, are:

Main--Delhi (Sikandarabad), Bombay, Calcutta, Madras and Shillong.

Primary--Ahmedabad, Bhubaneshwar, Ernakulam, Hyderabad, Jaipur, Jullundur, Lucknow and Patna.

Remote--Agartala, Aizawl, Bhuj, Car Nicobar, Gangtok, Imphal, Itanagar, Jodhpur, Kavaratti, Kohima, Leh. Minicoy, Panjim, Port Blair and Srinagar.

Mobile Stations

In addition one earth station that can be transported by road and two that can be carried by air will be readied for use in emergencies like floods and other natural calamities.

While the launching of INSAT is handled by the department of space, the P and T department takes care of earth stations. These stations are so located away from metropolitan towns to avoid possible interference from terrestrial microwave links.

The circuits derived via the satellite are extended to nearby metropolitan towns by microwave links or coaxial cables for integration with the national telecommunication network.

Further Details Given

Madras THE HINDU in English 15 Nov 80 p 7

[Text] New Delhi, Nov. 14.

India enters the era of domestic satellite communication tomorrow with the inauguration of the earth station at Sikandrabad near bulandshahr in Uttar Pradesh (see picture) by the Prime Minister, Mrs. Indira Gandhi.

With the inauguration, earth stations located at Port Blair, Car Nicobar, Kavaratti, Aizwal and Leh will become operational linking these remote areas with the country's telecommunication network via Intelsat.

The link is provided through the earth station at Sikandrabad and the one at Chingleput which are connected to the Delhi and Madras telephone exchange by microwave.

To be utilised initially for telephone and meteorological data communication, the satellite link will provide a channel for relaying television programmes after India's own satellites (INSAT) are placed in orbit in April 19682 and 1983. [as published]

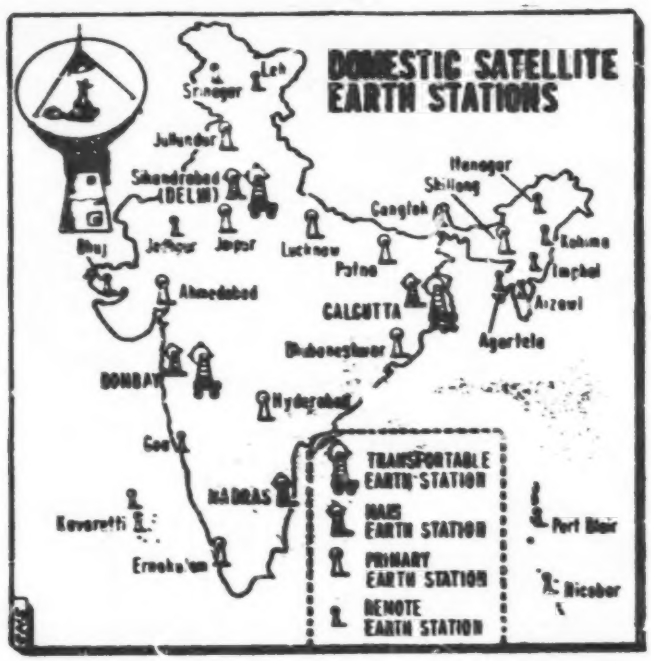
In all, there will be 28 earth stations and three mobile stations by the time INSAT is launched, the Communication Secretary, Mr. S. K. Ghosh, told newsmen during a visit to Sikandrabad yesterday.

The domestic satellite telecommunication network involves taking on lease of a quarter transponder from Intelsat operated by the International Telecommunication Organisation. The charges for hiring the quarter transponder comes to Rs. 20 lakhs per annum. The cost of the entire project is estimated at Rs. 5.42 crores.

Mr. M. L. Rawal, Deputy Director General of Satellite Project explained that the earth stations were generally located away from metropolitan towns to avoid possible interference form the microwave links already working in those cities. Besides the Delhi stations located at Sikandrabad and the Madras section at Chingleput, Bombay, Calcutta and Shillong will also be linked to the satellite through three

other stations which will be the main gateway to gain access to the national telecommunication network.

Eight other cities--Ahmedabad, Bhubaneshwar, Ernakulam, Hyderabad, Jaipur, Jullundur, Lucknow and Patna--will have what are called primary earth stations. Remote stations will be established at Agartala, Bhuj, Gangtok, Imphal, Itanagar, Jodhpur, Kohima, Minicoy, Panaji and Srinagar in addition to the five which become operational tomorrow.--PTI.



CSO: 5500

INDIGENOUS MANUFACTURE OF CROSSBAR EQUIPMENT PLANNED

New Delhi PATRIOT in English 15 Nov 80 pp 1, 9

[Text] INDIA will manufacture the indigenously designed cross-bar telephone switching equipment at the two-lakh line capacity factory at Rae Bareli, instead of going in for foreign systems, Communications Minister C M Stephen announced on Friday.

The production know-how and machinery for manufacturing the cross-bar exchanges is being provided by the Bell Telephones Company of Belgium, who are the collaborators of the Indian Telephone Industries (ITI).

The total investment in the plant will be of the order of Rs 65 crores, of which Rs 28 crores will be in foreign exchange, the Minister told newsmen at a press conference at Dak Tar Bhavan.

The Government's announcement sets at rest a controversy that has been raging for many months. The Government had before its proposals from many multi-national concerns offering technologies for electro-mechanical and electronic exchanges, including one from L M Ericsson of Sweden.

Mr Stephen said that though the Swedish system was better both in quality and performance, the Government had decided "to go in for our own child." The cross-bar system, which had been modified by ITI to suit local conditions, however was not bad and had been functioning normally in a Delhi exchange, Mr Stephen said.

Mr Stephen strongly defended both the decisions to manufacture cross-bar exchanges as also the collaboration with the Belgium firm. He said the equipment was new and there was no question of the foreign company dumping any obsolete machinery. Cross-bar equipment, he said, had not become outdated as was being reported, and in fact was still in wide use the world over and would continue to be so for many more years.

The electronic system which had been introduced in India also, was still in a stage of development and had not yet stabilised, he added.

The country, he said, would go electronic in telelphones, but that would take more time. In the meanwhile to meet the ever-growing demand for telephones, electro-mechanical equipment was required.

UNI adds:

Asked why Bell Company's collaboration had been sought, Mr Stephen said ITT was not in a position to undertake the manufacture of Indian cross-bar equipment on its own immediately. The machinery required for manufacturing the equipment would have to come from outside. The country could not afford to wait till ITI developed capability to manufacture the equipment through its own efforts. The collaboration was, therefore, limited.

Simultaneously, Mr Stephen said, the Government was endeavouring to create manufacturing capacities for electronic equipment. Two factories each to produce five lakh lines annually would be set up. Their locations had not yet been decided. The ITI's Palghat unit would also produce electronic equipment.

CSO: 5500

DELHI CONFERENCE VIEWS EXPANSION OF 'OANA'

BK171640 Hong Kong AFP in English 1457 GMT 17 Dec 80

[Text] New Delhi, 13 Dec (AFP)--Heads of Asian news agencies meeting here in a UNESCO-sponsored conference on communications have agreed in principle to launch a news exchange network under the auspices of the Organisation of Asian News Agencies (OANA), conference sources disclosed today.

The decision would be forwarded to the UNESCO with the suggestion that the exchange project be given top priority for the international programme for development of communication.

The PTI News Agency, which is expected to be the South Asian anchor for the project, said the name OANA would be amended to read the Organisation of Asia-Pacific News Agencies.

The statutes and working procedure of the new exchange network are expected to be finalised when OANA, formed 20 years ago with UNESCO support, holds its general conference in Kuala Lumpur next year, according to the PTI.

Under the recommendation, conference sources said, each agency, which is assigned the task of receiving and transmitting news, would handle the reception of news from selected agencies and transmit them to another group.

The New Delhi meeting, which began on Monday, will continue its sittings till Friday. Among the participants are India, Afghanistan, Bangladesh, China, North Korea, South Korea, Indonesia, Japan, Laos, Malaysia, Mongolia, Pakistan, Vietnam, Sri Lanka and the Soviet Union.

OANA is at present headed by Indonesia's ANTARA NEWS AGENCY, while PTI is its vice-president.

The New Delhi meeting is part of the second UNESCO-sponsored consultation as a follow-up to the inter-governmental conference on communication policies in Asia and Oceania held in Luala Lumpur in February 1979.

Meanwhile, the PTI yesterday took the first step in computerisation of its news operations with a demonstration organised here on electronic editing by computer and chaneling the news through an automatic switching system.

CSO: 5500

BRIEFS

INTERNATIONAL TELEX SERVICE--The Director General of the Overseas Communications Service has notified that direct international telex service with subscriber dialling facility is now available with the German Democratic Republic, UNI reports quoting an official release. With this fully automatic subscriber dailled international telex service is now available to 43 countries. [as published] [Text] [New Delhi PATRIOT in English 20 Nov 80 p 5]

TV BROADCAST EXPANSION--Minister for Information and Broadcasting Vasant Sathe has said the proposed second television channel in Bombay, Delhi and Calcutta can be in color and fully commercialized to earn revenues which could be used to expand the television network and modernize its equipment. [BK280512 Delhi Domestic Service in English 0240 GMT 27 Nov 80 BK]

CSO: 5500

BRIEFS

COMMUNICATIONS INSTITUTE CONGRESS ENDS--Tianjin, 19 Dec (XINHUA)--The China Institute of Communications, set up two years ago to study advanced telecommunications and sponsor academic exchanges, now has 23 branches with 6,485 members throughout China, with six more branches to be set up soon. This was announced by Wang Zigang, minister of posts and telecommunications, at the First National Congress of the institute which concluded here today. Attending the congress were 290 delegates from the fields of posts and telecommunications, national defense, communications and education. Wang Zigang was elected president of the institute. The China Institute of Communications was established in May 1978. It was formerly called the China Posts and Telecommunications Society, and changed its name in June this year. It publishes the magazines TELECOMMUNICATIONS JOURNAL and MODERN TELECOMMUNICATIONS. [Text] [OW191242 Beijing XINHUA in English 1224 GMT 19 Dec 80]

CSO: 5500

NEWS AGENCY HOLDS INAUGURAL MEETING

SK190922 Seoul HAPTONG in English 0811 GMT 19 Dec 30

[Text] Seoul, 19 Dec (HAPTONG)--A new, incorporated news agency, based on the two outgoing national news agencies--HAPTONG and ORIENT PRESS (OP)--was formed in an inaugural meeting of stockholders here today.

Kim Song-chin, OP president and chairman of the organizing committee for the new organization, was elected president of the YONHAP (UNITED) NEWS AGENCY in a subsequent meeting of directors.

Hong Il-hae, HAPTONG's managing director, was chosen as the managing director. The three executive directorships went to Yu Sung-pum and Yim Chol-kyu, both executive directors of HAPTONG and OP, respectively, and Yi Chong-sik, an ex-Yujonghoe member.

Chong Yuk-su, a onetime economic writer, was picked as the auditor.

Yi Won-hong, president of the state-run Korea Broadcasting System (KBS) and chairman of the Korea Broadcasters Associations, and Mun Tae-kap, president of the state-controlled SEOUL SINMUN and president of the Korea Newspapers Association, were also elected to set on the board.

Publication under the name of YONHAP will be made beginning January 5. During the the interval extending to December 31, HAPTONG and OP will continue to serve their clients with their own credits.

Members of the Korea Newspapers Association and the Korea Broadcasters Association, which comprise all major newspapers and radio and television networks in the country, hold a controlling interest of 51 per cent share of the new news agency.

The rest, 49 per cent of the equities, will be evenly contributed by the outgoing firms.

CSO: 5500

BRIEFS

USSR, ROMANIA PROTOCOL--A working protocol for 1981-82 was signed in Moscow today between Gostelradio and Romanian Radio-Television on cooperation in the sphere of television and radio broadcasting. A further development of exchanges of television and radio material on life in the two countries is foreseen. Particular attention is devoted to highlighting the 26th CPSU Congress. The protocol was signed by Lapin, Gostelradio, and General Director of Romanian Radio and Television Ionescu. [Text] [LD121222 Moscow Domestic Service in Russian 1000 GMT 12 Dec 80]

CSO: 5500

BRIEFS

PRESS AGENCY AGREEMENT--Vienna, 17 Dec--General directors Dr Ervo Lakatos of the HUNGARIAN NEWS AGENCY and Andreas Berghold of Austria PRESSE AGENTUR signed the co-operation agreement of the two agencies in Vienna on Wednesday. On the strength of the stipulations of the new agreement, the relations of the two news agencies that have seen favourable development so far, will further develop in the editing, technical and organizational areas. [Text] [LD200620 Budapest MTI in English 1753 GMT 17 Dec 80]

CSO: 5500

TELECOMMUNICATIONS RESEARCH IN OPTIC FIBERS ADVANCES

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 23 Nov 80 p 34

[Text] "The fiber of the century," this phrase placed above a microphotograph in the mural of the Optic Fibers Department of the Research and Development Center of TELEBRAS [Brazilian Telecommunications, Inc] in Campinas is an indicator of the hope researchers of the sector place on optic fibers, glass threads as fine as a hair, which promise a real technological revolution during this century, primarily in the telecommunications sector.

An optic fiber is a flexible glass thread with a sheath which may be of either glass or polymer (a type of plastic), made in such a way that it allows a ray of light passing internally through it to be reflected in the interface between the thread and the sheath, propagating itself continuously. Although Brazil began research later than other countries developed in the field of optic fibers, it has already managed to develop advanced technology in the sector, in the field of telecommunications and telemetry through the TELEBRAS Research Center.

In 1975, TELEBRAS initiated an optic fiber research project together with the Campinas State University Physics Institute, developing the technology for the manufacture of that fiber in the country. The initial phase of the project, according to program coordinator Professor Jose Mauro Leal Costa, was very critical because of the lack of a technological infrastructure in the country, which caused two years to be spent in training the personnel and installing the equipment needed for the work. "The technical personnel, for example, did not even know how to turn the laster on and off," commented Leal Costa. In 1978, however, the program was subdivided, the University of Campinas being given the responsibility for the academic part of the project and for the technology development center, an operational structure which remains today.

The principal motivation for the entire world to develop optic fibers lies in the field of telecommunications. Professor Leal Costa explains why: "A fiber today performs the same function as nearly 800 pairs of copper wires--the conventional system--in a telecommunications cable. A cable with 1,000 pairs of copper wires can be replaced by a cable with six optic fibers, which would also have a thickness one-fourth as great as the former. Moreover, transmission by optic fibers is completely immune to electromagnetic interference, an inherent property since it is made of glass."

From the strategic point of view, it is very important for Brazil to develop its own technology in that area since the raw material used in the manufacturing of optic fibers is silica which comes from quartz, of which Brazil has the best quality and largest reserves in the world. Copper, on the other hand, is already being listed among the rare metals because of its scarcity in the world, a factor which is giving it a high price.

Despite the interest awakened in the world for the use of optic fibers in telecommunications, it is also outside of that field that its applications are becoming greater and greater. A typical example is telemetry in electric powerplants. According to Jose Mauro Leal Costa, the property of immunity of optic fibers to electromagnetic interference, which is very great in distributing substations for example, is being used.

For the purpose of demonstrating that property, TELEBRAS installed a system of telemetry in the substation of Carioba of the Sao Paulo Power and Light Company CPFL, in the municipality of Americana in the region of Campinas. The work was performed jointly with the ELETROBRAS [Brazilian Electric Power Companies, Inc] Research Center [CEPEL]. "That system," said Leal Costa, "sends information via optic fibers on the status of operations of one of the high-voltage circuit breakers of that substation. Positive results obtained from that application led the CPFL to become interested in the installation of similar new systems."

TELEBRAS also developed an optic fiber to be used in the Itaipu hydroelectric powerplant for the telecontrol operation of rectifiers, devices which will convert the 50-cycle alternating current generated in Paraguay to direct current, which will be subsequently transmitted to Sao Paulo and reconverted to 60 cycles.

Said Leal Costa: "That application not only uses the property of immunity to magnetic interference but also the property of resistance to dielectric breakdown. That phenomenon takes place when a conventional metallic conductor is used in those installations and due to the great difference in potential between the ends of the conductor, a discharge very similar to a lightning bolt is propagated along it. Optical fibers are not subject to that phenomenon.

First Use at Itaipu

The advanced technology component was already tested in laboratories abroad and its know-how was acquired by a national company which will manufacture the fibers. However, the Brazilian Government has not yet decided whether to use the fibers developed by TELEBRAS in the Itaipu powerplant or whether to use Swedish technology, according to Professor Leal Costa.

Although it was known that TELEBRAS worked hard in research for the optic fiber to be used in Itaipu, the project coordinator said that the main concern is to manufacture the product for telecommunications. Leal Costa said: "In that sector we have been working for nearly 6 months in the laboratory, already on the scale of a pilot plant, in the development of a fiber today being used in commercial telecommunications installations. The next 6 months is the period we believe necessary for the solution of details of the technological process. This will allow us to achieve a product equal to the best being sold in the world today."

By the end of next year TELEBRAS intends to develop the prototype of a telephone system using optic fibers, but the prospect for its transfer to industry is that of around the middle of 1982. The first step by TELEBRAS will be the replacement of conventional telephone systems with optic fiber systems.

Although they may not be practical for Brazil in the short and medium term, "extraordinary things" are already known, according to Leal Costa, which could be done with optic fibers and which are going to alter the psychological behavior of people. The optic fiber, because of the large quantity of information it can carry from one point to another, is going to provide the user access to a range of information much greater than that available today. For example, a videophone system, today impractical because it requires a large number of channels, which makes it expensive, will be commercially practical with optic fibers. Peripheral access to computers will be available to users in their homes also. They can offer many types of information ranging from arrival and departure schedules of aircraft at airports to the up-to-date prices at the city supermarkets.

8908
CSO: 5500

DOMESTIC COMMUNICATIONS SATELLITE CONSIDERED NECESSARY

Operation Scheduled For 1985

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 25 Nov 80 p 16

[Text] Contracts for the Brazilian domestic satellite will be signed in 1981 and it will go into operation within 4 years if Minister of Planning Delfim Netto approves the suggestion in that respect forwarded by EMBRATEL [Brazilian Telecommunications Company] with the endorsement of TELEBRAS [Brazilian Telecommunications, Inc]. The space portion of the system, estimated at $70 million, will be acquired abroad, according to EMBRATEL president Helvecio Gilson, because it makes no sense to "activate a national industry for the construction of 'only one satellite.'"

The financial study of the program was already accomplished by EMBRATEL and included in its proposed 1981 budget, which stipulates expenditures on the order of 12 billion cruzeiros. Helvecio Gilson revealed that contracting is possible through financing of 10 or 12 years, with no payments for 3 years and a rate of interest "which up to a short time ago was 7.5 percent per year."

The purchase of a satellite by Brazil becomes practically mandatory as of next year when the country will have completed 18 earth stations--one of them in Fernando de Noronha--needing the services of the space system to attend to the demand. Although there may be other options, the advantages of the satellite are many, according to technicians, beginning with the cost for leasing channels which is now around $3 million per year.

Another aspect which makes a quick decision necessary is the fact that Brazil has the right to only one point in the communications satellite orbit. The ideal point for the country--over the Amazon Region--is being claimed by Intelsat, who wants to install a satellite in it for the domestic purposes of its subscribers.

Domestic Satellite Restudied

Rio de Janeiro O GLOBO in Portuguese 26 Nov 80 p 18

[Text] Secretary of Planning of the Ministry of Communications Artur Alves Peixoto said yesterday at the seminar on new means of communication in EMBRATEL that the government is restudying the launching of a domestic communications satellite because the lease paid now to Intelsat is already the equivalent of the cost of construction of a new and exclusively Brazilian satellite.

Alves Peixoto explained that Brazil is going to spend nearly $100 million by 1990 as rental for some channels of the reserve Intelsat satellite. For that much money Brazil could build a satellite to attend exclusively to its own needs and put an end to its dependence on Intelsat.

"It is important to remember that Brazil leases the reserve Intelsat satellite. In the case of a malfunction of the primary satellite, the users of that satellite will be transferred to the reserve and we will be left with nothing. That means there is no security."

Alves Peixoto explained that the decision on the construction of that new satellite has to be made by the government next year. The restudy is being made because there is a need to update prices. The last call for bids made by the government in 1976 showed the Hughes Company of the United States to be the winner with a bid of $70 million, which included the costs of launching by NASA of the United States plus insurance.

8908
CSO: 5500

BRIEFS

RADIO COOPERATION WITH CZECHOSLOVAKIA--Agreements for mutual cooperation and assistance between Czechoslovakia Radio and Radio Free Grenada were signed last Friday the 12th in Havana, Cuba. Signing in behalf of Radio Free Grenada was this country's ambassador to Cuba, Brother Richard Jacobs. The Czechoslovak ambassador to Cuba signed in behalf of his government. Included in the protocol (?were) agreements for the exchange of radio programs, training of personnel and [words indistinct] technical assistance. [Text] [FL152349 St George's Domestic Service in English 2330 GMT 15 Dec 80]

CSO: 5500

MASS COMMUNICATIONS SYSTEM SAID UNDERWAY IN KANO STATE

Kaduna NEW NIGERIAN in English 15 Nov 80 p 7

[Text] PLANS for the development of a state-wide mass communications systems are now under way in Kano State.

Already, agreements for the acquisition of transmitters, radio link systems, transformers, training facilities and radiowave antennae, have been reached between the state's Ministry of Home Affairs and Information and a renowned firm in North America, which is expected to participate in supply contracts which is now imminent.

These facts were disclosed by the state's Commissioner for Home Affairs and Information, Alhaji Ahmed Mohammed Gumel in an interview recently.

He said that about four million Naira would be spent on the exercise for the purchase of equipment and facilities needed.

He further said that supply agreements were made between the state government and the Haris Farinon Telecommunications Group of North America. The company, he went on, was the winner of the 1974 Academic Award for the development of microwave equipment.

The commissioner who has just returned from a three-week working tour of Europe and North America, also disclosed that a total of 14 powerful broadcasting station transmitters would be installed throughout the state under the projected mass communications programme.

According to the commissioner, these high frequency transmitters would cost the Kano State Government the sum of 1.3 million Naira, adding that "they would enable crucial mass communication programmes to reach every citizen in the state". In addition, the commissioner said, the Telefunken Corporation of Europe would instal frequency modulation (FM) units with the new transmitters.

He however, explained that his official working tour had enabled him to make useful contacts for the establishment of a technical training school for broadcasters, which according to him, would be the first of its kind in West Africa.

The Haris-Farinon Group which the commissioner said would also be involved in the establishment of the proposed technical school is currently training some Nigerian broadcasters in North America.

CSO: 5500

BRIEFS

NEW RADIO STATION--An all-day radio station to replace Radio Jacaranda will go on the air at the beginning of next year. The new station, to be called Radio Three, will be similar to Radio Jacaranda in music selection and presentation. "This has been under consideration for some time," a ZBC spokesman said. "However, no decisions have yet been taken as to wavebands and frequencies. Radio One, which uses Radio Jacaranda frequencies during the day, will continue as an all-day station." [Text] [Salisbury THE HERALD in English 2 Dec 80 p 3]

CSO: 5500

REJECTION BY SWEDEN ASSURES DEMISE OF NORDSAT PROJECT

Copenhagen BERLINGSKE TIDENDE in Danish 26 Oct 80 p 2

[Article by T. H.]

[Text] The Nordsat project must now be considered dead. The death certificate will probably be issued on 4 November 1980 at 10 o'clock at the Nordic Cultural Secretariat in Copenhagen where Nordic Collaboration Ministers' deputies are meeting. Officially, this certificate will then be signed by the Nordic Collaboration Ministers on 10 November, and the funeral will take place at the Nordic Council's session in Copenhagen in March of 1981. It will not happen quietly, but behind all the words it will be clear that one of the largest imagined Nordic collaboration projects never will become a reality. In the northern countries we will never see each other's TV or hear each other's radio via a Nordic satellite.

Politically, the reason is simple: The Swedes are saying no. For many years, Finland has had to listen to criticism for resisting an economic union. The defense collaboration also did not come about, among other reasons because Denmark and Norway preferred NATO. During the seventies, Denmark has had to suffer criticism due to our EC membership. The great imagined Norwegian/Swedish industrial collaboration with Volvo as the starting point was overturned by Swedish Volvo stockholders, heavily supported by Marcus Wallenberg. The Nordsat idea is dropped because the conservative Swedish government now joins the Swedish Social Democrates' rejection. Norway is still just as positively disposed to the idea while Finland is following the Swedish stand. Denmark, especially after Niels Matthiasen's death, is half-hearted and is following the common voice.

The Cultural Secretariat has made the politicians' choice easy through the meeting preliminary which it has drawn up. It has drawn up three alternatives for the Minister Council proposal. All three proposals are filled with beautiful words about the necessity for increased media collaboration both for cultural reasons and in reference to the fact that in a matter of five years maximum, we will have to accept European satellites.

In the two alternatives, a Nordic satellite is mentioned positively. However, the politicians want to choose alternative three, and this is where the death sentence lies, neatly wrapped: "The minister council ascertains that, regardless of the possibilities the project can offer, an expanded Nordic radio- and TV collaboration with the use of directly transmitting satellites, does not seem desirable, nor possible to accomplish from a cultural-political point of view and as a result of the project's cost.

The cultural secretariat suggests that the industry ministers now be included in the plans for media collaboration because it fears that when not given the stimulant which Nordsat would have provided, European competition will cost Nordic electronic industry both jobs and shares in the market. In money, we would be talking about approximately one billion Danish kroner.

9667
CSO: 5500

LEADING POSITION IN TELE-LINKS RETAINED

Nicosia CYPRUS MAIL in English 4 Dec 80 pp 1, 4

[Text]

CYPRUS RETAINS ITS LEADING POSITION AMONG THE COUNTRIES OF THE WORLD IN INTERNATIONAL SUBSCRIBER DIALLING (ISD) HOLDING FOURTH PLACE AFTER BRITAIN, AUSTRALIA AND THE UNITED STATES, THE CHAIRMAN OF THE CYPRUS TELECOMMUNICATIONS AUTHORITY (CYTA), MR N. ROUSSOS, SAID YESTERDAY.

The CYTA Chairman was speaking at a press conference at which he presented the Authority's annual report for 1979 showing a net surplus of £2.6 million as against £2.2 million in 1978 (and a deficit of £250,000 in the invasion year of 1974).

The operating revenue for the year was £12 million as against £9.6 million in 1978 (an increase of 26 per cent).

Mr Roussos said telecommunication rates in Cyprus were generally lower than in other countries.

Despite the expansion work carried out in the year and similar work carried out in previous years, the Authority, far from increasing its rates, has reduced them in most cases.

The reduction started with the instant telephone dialling in 1975 and the last increase was in 1972. «At present no new increase of telephone charges is anticipated», he said.

Giving an example of reductions Mr Roussos said that telephone rates have been reduced by up to 30% with an average reduction of 15% and the minimum chargeable time is reduced from 180 seconds (three minutes) to 14 seconds.

Reduced charges

Telex service charges have reduced by 25 per cent on average and the minimum chargeable time is down to 60 seconds from original three minutes.

Rentals for PABX and switchboards in hotels have been reduced by 48 per cent as from 1978.

As against its £2.6 m. surplus for 1979 the Authority had outstanding medium-term and long-term debts amounting to £3.8 million in 1980 which in 1994/90 will go up to £8.5 million plus those signed in 1980 amounting to £15.7 mill. later to be repaid in 1990/93.

These commitments, Mr Roussos said, cover scheduled projects of development, maintenance, improvements and further bolstering of services provided to the public and the country.

The surplus besides being of help in facing these commitments, is also helpful in consolidating even more the credibility of the Authority in the eyes of its suppliers, who have been giving the Authority credit facilities without any guarantee. «The Authority's balance sheets serve as a guarantee», Mr Roussos stated.

Satellite

The CYTA Chairman mentioned among the latest achievements Satellite Earth Station (planned to come into operation in Christmas 1979 but owing to impediments abroad finally launched in May 1980) and said preparations are being made for the invitation of tenders during the current year for Automatic Dial Mobile Telephone Equipment (for vehicles), a Facsimile Subscribers Apparatus and an Instrument Landing Service (ILS) at Larnaca Airport.

Also 40 data modem units were ordered for the introduction and operation of a new DATEL service (for intercommunication for big corporations).

Answering questions, Mr Roussos said that the Satellite Earth Station started with 28 channels and one colour TV channel but now has 50 channels in addition to the TV channel.

The requests of foreign correspondents are already being met for Satellite Earth facilities to relay TV news stories to Europe and the USA while other services for film editing and availability of executive aircraft pertain to other authorities, like the CBC and Cyprus Airways.

Mr Roussos said that 26 telephones and four telexes are operated in the north with the subscribers paying their subscriptions and fees to the Authority.

Mr Roussos denied emphatically that telephone conversations are being tapped. This is strictly prohibited by the Authority, he said.

The Chairman of the Authority mentioned, among other things that at the end of the year there were 70,000 Direct Exchange Lines (DEL), three more countries (Gibraltar, Oman and Qatar) became available on the International Subscribers Dialling System bringing the total to 65 and Cypriot subscribers can communicate with 72 countries through semi-automatic telephony (the three latest additions being Cuba, Egypt and the Yemen Republic).

During the first ten months of the current year 4,931 new subscribers were linked with telephone exchanges all over Cyprus.

«The Authority's wish is to meet applications in 24 hours, if possible but, he said, it should not be forgotten that laws and regulations have to be complied with and he sought the understanding of the public.

«To succeed in its work, the Authority must not only make efforts itself, but be assisted by those about to be served by its, he said.

CSO: 5500

RESEARCHERS MASS QUITTING THREATENS TELECOMMUNICATIONS

Oslo AFTENPOSTEN in Norwegian 17 Nov 80 p 29

[Article by Knut Lovstuhagen: "Telecommunications Drained of Researchers"]

[Text] The leaders of the Telecommunications Research Institute are alarmed over the lack of personnel in which the Institute finds itself. "If before long we are unable to offer competitive salaries we shall be in a catastrophic position as concerns the work of new and cost-saving technology in our telecommunications," says Research Director Peter Hakonsen to AFTENPOSTEN. "In the course of a relatively short period of time we have lost one half of our research leaders and one research chief to private enterprise. We are heavily drained of qualified personnel."

The Telecommunications Research Institute plays a central role in planning the telecommunications network in this country. The division can simply be described as the telecommunications architect. It finds solutions for the use and operation of existing installations, so that the great sums invested in them can be exploited in the best way, and is to find solutions for introduction of new telecommunications services.

"Our technicians are much in demand in private enterprise, which offer salaries far above what we can offer. We lose people in key position almost as soon as we have them trained and taught, with the result that as far as competence is concerned we are in a poor position at a time when Telecommunications are faced with challenges as never before. The new technology to b introduced in telecommunications includes complicated systems, and we must place ever stricter educational demands upon our personnel. But as salaries are today, we are able to keep our people for only a few years before they are bought up by private enterprise," says Hakonsen.

The "brain drain" affects not only the Telecommunications Research Institute, but the EDB [data processing] and the technical section as well in the department. One generally held opinion is that the only thing that can solve the problem is that of putting Telecommunications in a special position in the state pay system, like Statoil and the Oil Directorate, so that key personnel can be paid at a level that makes employment in this department as attractive as in private enterprise. But time passes without results in that direction, and in the meantime the flight of qualified personnel from Telecommunications continues.

About a year ago, Telecommunications presented an ambitious long-range plan for development of the Norwegian telecommunications network up until 1991. The main effort is to be based on computer technology. However, Research Chief Hakonsen fears that the plan is faced with failure unless something is done about the personnel situation, and in his opinion there are signs that Norway is losing terrain in the telecommunications area in relation to other countries.

"We have projects ready, but cannot get them started because of the lack of personnel," he says. "We have managed to get some projects started, but at a pace which is completely inadequate. This applies to the whole spectrum of new technology. In my personal opinion, our long range plan is in danger."

State Personnel Director Nils Mugaas says to AFTENPOSTEN that Telecommunications, in connection with the adjustment and normalization negotiations under way with the state employees organizations, can use some funds to cover the positions telecommunications wishes.

"In the salary scale it was decided to set aside .8 percent for adjustments and normalizations. Some of these means have been used for temporary positions and some have been distributed among the various departments, and the large traffic departments have received their own amounts for disposition. For this money they can adjust positions up to and including salary step 25, and adjust chiefs' salaries. The institutions are free to distribute the money as they wish within the given framework," says Mugaas.

Per Wilhelmsen, chairman of the Telecommunications group of the Society of Norwegian Civil Engineers, says to AFTENPOSTEN that the adjustment and normalization settlement to which Personnel Director Mugaas referred allows no salary changes necessary for holding on to key personnel. "The funds available are much too scant in view of the fact that the salary difference between Telecommunications and private enterprise amounts to between 30,000 and 40,000 kroner," he says.

Wilhelmsen points out that there is pass-through of civil engineers in the department, and that it is a one-way street.

"If we could get people who have worked for some time in private industry to come to us with their experience, we would have no objection to such exchanges of personnel. But as the situation is today no such exchange takes place. Another problem is that our suppliers need qualified counterparts in Telecommunications for the purpose of obtaining corrections and help in development of equipment from the department experienced in practical application of the equipment. If we cannot give the suppliers such help, neither shall we be able to compete in the international market. The lack of qualified personnel in Telecommunications is therefore a headache for Norwegian telecommunications industry," says Wilhelmsen.

11,256
CSO: 5500

REJECTION OF NORDSAT BY SDP PROBABLY DOOMS PROJECT

Stockholm SVENSKA DAGBLADET in Swedish 9 Nov 80 p 3

[Article by Agneta Lagercrantz: "Talk For 26 Years--Then No"]

> [Text] As the Social Democrats decided this week to say no to the satellite for economic reasons, the opposed in the Swedish Riksdag are in the majority.

These movements have taken place within the committees of the Nordic Council and thereby initiated a debate that has gathered momentum during the past 3 years.

Already in 1954 there was a proposal by the Nordic Council that the member countries should establish a common television company. In 1958 the so-called Nordvision began and 4 years later the first committe about Nordic television cooperation was established. Only in the beginning of the 70's did the Nordic Council present a final report that was under consideration and advised the member countries to build up the television network, however, with conventional technique.

"Distinguished Report"

The Swedish Space Agency pointed out in its response that technique was so advanced that it would be possible to directly broadcast television programs via satellite both within technical and economical premises. The Nordsat committee was appointed in 1975 and presented its report in June 1977. The opposition against a Nordic television satellite gathered momentum.

The Nordic Council's representative group presented its big report in 1979, made with the cultural secretariat in Copenhagen, to be sent out for consideration. According to Per-Olaf Sundman, former chairman of the Nordic Council's cultural committee and now a member of the videogram committee, this report is the most distinguished report ever to be made about ether media in the world.

Criticism

The Left Party Communists in Sweden have always been negative towards Nordsat. The Liberal Party, with Minister of Education Jan-Erik Wikstrom in the forefront, and the Conservatives have had a positive attitude, while the Center Party, as late as at the congress in June this year, decided to say no. Nils G. Asling made a reservation. When the Social Democrats now also say no, it is not in direct keeping with the Nordic party brothers.

Both the Social Democrats in Denmark and the Labor Party in Norway are clearly positive towards the Nordic television satellite. With the exception of the People's Alliance in Iceland, in principle, all Nordic left-wing parties have been strongly negative.

In general, it is the Norwegians and the Icelanders who have promoted Nordsat most heatedly, while the Finns and the Danes have expressed a somewhat cooler approach. It is Sweden that has caused the neighboring countries to worry that satellite television will never come about.

In Sweden it is mostly workers in the cultural field, journalists and radio personnel that have been critical--but evaluation bodies, such as LO, TCO, Save the Children, the Immigration Department and the State Cultural Council that have opposed the proposal. The arguments are primarily cultural political: more television channels do not produce better programs, rather the risk of passivism as the television hours are increased. A great number of entertainment programs can cause the viewers to avoid cultural programs and discussions.

Advocates

The arguments in favor of Nordsat have been that contacts and culture exchange between the Nordic countries will be built up. The television viewers get greater selection opportunities. Nordsat means increased job opportunities and inevitable, inexpensive and fantastic technique. The advocates are primarily represented by, for example, the Space Agency, SAF, the Federation of Industries, the State Federation of Radio Dealers, radio suppliers and the Swedish Language Committee.

9583
CSO: 5500

INDUSTRY MINISTER ASLING PROPOSES NEW NORDSAT PROJECT

Stockholm SVENSKA DAGBLADET in Swedish 9 Nov 80 p 3

[Article by Richard Plate: "After No To Nordsat, Asling Has A New Satellite Proposal"]

[Text] Despite the opposition to Nordsat, Minister of Industry Nils G. Asling, has not given up hope about a Nordic TV-satellite. On Monday, the administration will make an initative regarding a new form of cooperation which does not deal with culture.

This will take place when Minister of Education Jan-Erik Wikstrom and Minister of Communication Ulf Adelsohn participate in the ministers' meeting in Copenhagen.

From Sweden they will bring with them Asling's proposal regarding a TV-communication satellite called Tele-X.

It is, of course, said that I, along the the Conservatives and the Liberals, am being overruled in the administration, says the minister of industry to SVENSKA DAGBLADET. I have, however, bowed to the fact that the Nordsat-project is not ripe for execution, actually because of financial reasons. When the ministers of culture and communications meet in Copenhagen on Monday, the shelving of the Nordsat-project in the foreseeable future will be on the agenda.

--My actions regarding this issue have mainly been dictated by considerations of the industrial policy. As minister of industry, I am responsible for the Swedish Space Agency and the State Delegation for Space Cooperation. It is the latter that administers the appropriations to the Swedish activities within that branch. Namely, I cannot sit idly by and watch when technical and industrial competence within the telecommunication industry is wasted without any concern to save it and develop it.

--During my recent foreign trips, I have repeatedly been forced to act as a PR-man for this operation. It would not be good at all for the advanced Swedish industry if, for example, LME began to lose the pace and therewith the market. When I now concentrate on another form of Nordic cooperation, it is not an attempt at all to admit Nordsat through the backdoor without an initative of great interest for Nordic industry.

Asling does not conceal his irritation over some of the objections against Nordsat. The misgivings the radical left cultural people have about commercialization of the

culture dictum, would weigh lightly against the possibilities of creating a balance against the continental offerings that will be reaching us in 1984. In Asling's new cooperative initative the culture is, however, discarded. He is careful to point that out. Now, it is industry that matters.

Cooperation

I would like to establish a Nordic cooperation about Tele-X-satellite, says Asling. The aim is to create possibilities to, in a practical way, investigate the technical basis for a national and regional telesatellite system within different areas. Through that, Tele-X will prepare consumers, suppliers and operators for a future satellite system.

The minister of industry points out that during the research that up to now has been done for Tele-X, it has been the Norwegians who have shown themselves to be especially alert, just as in the Nordsat case. The National Norwegian Telecommunication Administration has, among others, expressed active interest in the experiment of Tele-X. All the more so if through direct cooperation with the Swedish Telecommunication Administration it will be possible to find solutions that give the best possible cooperative telecommunications possibilities with the operational system that will be effective in Europe from the middle of the 80's. The Norwegians have stated that they prefer such a cooperation to participation in the space experiment with West Germany.

Norwegian TV-2

There is another aspect of use for the Tele-X that is of high interest to the Norwegians. That would be able to solve their problems with another TV-channel. The experiment with direct TV aims towards transferring sound and picture, in a practical way, along with direct distribution from two or three TV-channels, to home viewers in the North.

Besides, the Tele-X experiment will mainly be goal directed. It will, among other things, deal with data transfer in the form of "electronic mail," establishing wireless telephone connections and computer communications. Tele-X would also remove the difficulties of contacting trucks, long-distance busses and trains traveling in Europe and the Near East. This portion of the program is called "Trucksat."

Basic Research

An important element of a basic research character also lies within the frame for Tele-X. The wave distribution experiment will chart the distribution conditions in the frequences that will be used by the telesatellite. The result of these measurements will be the basis for formation and dimensions of the future Swedish and Nordic TV-satellite system.

This is the arrangement that Asling wants to "sell" to our Nordic enighbors, and it seems that he already has received clear signals from Norway. The Swedish minister of industry is not interested in waiting any longer. One can speculate that he did get the administration behind him to approve an appropriation in the amount of tens of millions--when it now did not accept Asling's concepts about Nordsat.

9583
CSO: 5500

PAPER APPROVES TELECOMMUNICATIONS AGENCY PLAN

Stockholm SVENSKA DAGBLADET in Swedish 9 Nov 80 p 2

[Editorial]

[Text] We encourage the Swedish government to approve Nordsat. This is the message of an appeal that was signed by a number of immigration organizations in Sweden. It would be of great importance for immigrants from Denmark, Finland and Norway to get the opportunity to see their own countries' television programs here in Sweden. There are about 300,000 Finns in Sweden and a great number of Danes and Norwegians.

9583
CSO: 5500

END

JPRS 77177

14 January 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 145

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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14 January 1981

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TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 145

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'TANJUG' PRESENTS EQUIPMENT TO ETHIOPIAN NEWS AGENCY

LD232318 Addis Ababa Domestic Service in Amharic 1700 GMT 23 Dec 80 EA

[Text] TANJUG, the Yugoslav news agency, has provided the Ethiopian news agency with equipment capable of receiving TANJUG news transmissions. This is in accordance with the 1972 information exchange agreement between the two news agencies.

Those present on the occasion were Comrade Girma Yilma, minister of information and national guidance and commission for organizing the party of the workers of Ethiopia Central Committee member; Comrade Baalu Girma, permanent secretary of the ministry of information and national guidance; Comrade Dusan Marinkovic, SFRY ambassador to Socialist Ethiopia; officials of the embassy and heads of the different departments of the ministry of information and national guidance.

In his speech Comrade Girma Yilma expressed admiration for TANJUG's efforts toward the formation of a new international information order free of imperialist and colonialist sabotage and divisive acts. He added that TANJUG's anti-imperialist stand and the decisions made by the leaders of the nonaligned countries in the Havana and Colombia conferences on the exchange of information among the nonaligned countries led it to this contribution. He also thanked TANJUG for giving the equipment free of charge.

Comrade Ambassador Dusan Marinkovic, for his part, said that the gift of the equipment to the Ethiopian news agency is a confirmation of the existing fruitful and all-round cooperation between Socialist Ethiopia and the SFRY.

CSO: 5500

ASIA-EUROPE TV NEWS EXCHANGE CENTER DESIGNATED

BK290955 Kuala Lumpur International Service in English 0830 GMT 29 Dec 80

[Text] Kuala Lumpur has been designated the center for TV news exchange between Asian-Pacific countries and Europe. This was stated by the secretary general of the Asian-Pacific Broadcasting Union, Mr (Roku Ito), at the opening of the sixth Asian-Pacific television news exchange course at the Asian-Pacific Institute for Broadcasting Development [AIBD] in Kuala Lumpur today.

He said UNESCO has been requested to reduce its tariff rates for using the Indian Ocean satellite to enable greater participation by Asian-Pacific countries in the program.

The director of AIBD, Mr (Balakrishnan), said even though there was no daily TV news exchange with this region at the moment, participants should consider the course as part of the preparation for TV news exchange. He also pointed out that the course was also part of the program to upgrade the knowledge of news personnel of the Asian-Pacific region on par with developed countries.

Thirty-six participants from nine Asian-Pacific countries are attending the month-long course. Over 200 news personnel from the Asian-Pacific region had benefitted from the course since its introduction in 1977.

CSO: 5500

INDONESIA TAKES CONTROL OF SATELLITE COMPANY

BK301020 Hong Kong AFP in English 0957 GMT 30 Dec 80

[Text] Jakarta, 30 Dec (AFP)--The Indonesian Government has taken over the telecommunication Indosat from the American corporation ITT (International Telephone and Telecommunication) at a purchase price of $43,616,000, it was reported today.

The takeover, expected to be operationally effective as from next January, was finally settled last December 16 after protracted negotiations which started 3 months ago, between ITT and an Indonesian negotiating team headed by Minister of State Administrative Reform Dr. J.B. Sumarlin, BERTIA BUANA (world news) daily reported.

Indosat, which operates the country's international telecommunications system through an earth satellite, was established as an ITT subsidiary in Indonesia in 1967.

The Indonesian Government had since long ago wanted to take over the vital company, but was not in a position to make a purchase offer until its foreign exchange reserves reached a favourable level (now estimated at some $8 billion), the paper quoted officials as saying.

CSO: 5500

BRIEFS

U.S., INDONESIA SIGN AGREEMENT--Beijing, 10 Dec (XINHUA)--The United States yesterday signed an agreement with Indonesia for launching two more Indonesian communications satellites, by the National Aeronautics and Space Administration (NASA), according to reports from Jakarta. Under terms of the agreement, said a statement issued by the United States Embassy in Jakarta, the two new satellites--Palapa B-1 and B-2--will be launched by the space shuttle or, at Indonesia's option, by Delta expendable launch vehicles in early 1983 and 1984. The two satellites will provide voice, video, telephone and high speed data services to Indonesia and other member countries of the Association of Southeast Asian Nations (ASEAN): Singapore, Thailand, Malaysia and the Philippines. NASA had launched two earlier versions of the Palapa satellites in 1976 and 1977. Both satellites are still operational but will be later replaced by the new ones. [Text] [OW100724 Beijing XINHUA in English 0717 GMT 10 Dec 80]

CSO: 5500

BRIEFS

'PTI'-'ANTARA' EXCHANGE--New Delhi, November 27 (PTI): The Press Trust of India and the Indonesian news agency, Antara, have started exchanging news on a direct 24-hour satellite circuit. This is the first such link established between India and South-East Asia. The link is part of PTI's programme of expanding its foreign service and news pool operations. When the line was commissioned, the heads of the two news agencies exchanged greetings and hoped it would promote a more balanced flow of news among the developing countries of the region and strengthen the non-aligned news pool. [Text] [Bombay THE TIMES OF INDIA in English 28 Nov 80 p 9]

CSO: 5500

BRIGHT COMMUNICATIONS ADVANCES SEEN FOR 1980'S

Canberra THE WEEKEND AUSTRALIAN in English 1-2 Nov 80 p 15

[Text] As we enter the 1980s, no industry will reach deeper into the lives of Australians than communications.

During the next decade, people on opposite sides of the globe will be able to see each other in living color as they talk...problems with products or machines--or even with health--will be diagnosed electronically from remote locations... broadcasting will be improved with superior transmission networks.

Team up these developments with a fibre optics telephone system with its capacity for several times the number of television, radio and voice signals now carried by cables, and the foundation is laid for sweeping changes.

These dramatic changes will completely alter our commercial and private lifestyles. This is the vision of the 1980s forecast by the Australian Telecommunications Development Association, the central body representing the electronics manufacturing industry in Australia.

In its annual review of the industry, the ATDA cites the 80s as a decade vital to the future of a viable telecommunications industry and inherent in that fact, vital to the economic progress and continuing development of the Australian nation.

A whole new industry is emerging, says the review, fusing the skills and technologies of data processing, telecommunications and office products. It has been called the "information revolution."

There are many exciting prospects ahead, the report continues. The 80s will see the introduction of powerful single purpose information and communications systems such as:

Computerized TV news digest--enabling viewers to select a news--sports-weather report at any time at the press of a button;

Electronic banking--the move towards a substantially cashless society and the use of Electronic Funds Transfer Systems (EFTS) where the financial and retail institutions will be electronically linked. Credits or debits to a customer's

bank account will occur simultaneously with the purchase transaction taking place in a downtown department store;

Electronic mail--the growing movement by business houses to facsimile transceiver systems which will transmit documents anywhere in Australia or to the world in a matter of seconds. Overseas will take a bit longer;

TV business conferences--hooking up interstate/overseas executives and eliminating much of the costly and time-consuming travel by businessmen;

Plus, of course, the cheap manufacture of integrated circuits will see the mass application of micro-electronics to control a battery of household, industrial and commercial functions. We will have microprocessors controlling the cooking, the lights, the sprinkler system and process line manufacturing jobs.

Electronic shopping--using video terminals and EFTS to let the housewife shop from the comfort of her own home;

The 80s will also see Australia's first national communications satellite bringing subscribers in remote parts of the country into the public telecommunications network.

CSO: 5500

SATELLITE WILL BRING DATA PROCESSING CHANGES

Canberra THE FINANCIAL AUSTRALIAN in English 11 Nov 80 p 7

[Text] An expert on communications satellites has warned the data processing community of the impending impact of the Australian satellite.

Dr Norman Abramson, Professor of Electrical Engineering and Computer Science at the University of Hawaii, believes that many Australian organisations will gain their initial "hands-on" experience of communication satellite technology via their data processing departments.

"Because of this, the data processing manager will increasingly be looked to as the 'inhouse expert' on satellite and communication technology in general," he said.

"With the merging of the computer and telecommunications technologies, organisations will no longer be able to manage their data processing, telecommunications and business information systems as separate streams.'

But, unfortunately, many data processing managers were not in a position to make an adequate assessment of the impact of this pervasive technology on the total business.

"While many data processing departments are currently engaged in reviewing and even implementing interactive word processing, electronic mail and distributed processing systems, on the whole such activity is taking place within the restricted environment of existing terrestrial telecommunications facilities," Professor Abramson said.

The introduction of Australia's own national communications satellite in the early 1980s would remove many of these restraints and provide the cheap, flexible data, voice and visual transmission facilities necessary to utilise fully the application potential of computer technology.

"In addition, it will open up innumerable business opportunities for the development of new communication satellite based services and the equipment and software to operate them."

Owing to the close linkage of computer and satellite technologies, there would be a widening of the corporate role of the data processing manager, he said.

"Chief executives will expect data processing managers to play an ever increasing role in long range corporate planning and in the overall management of the total business communication function."

The recent introduction of powerful new communication satellites combined with the new generation of cheap earth stations had made communication by satellite an extremely viable commercial proposition, he said.

Within 10 years every major building would have an earth station for computer, telex, electronic mail, voice, and teleconference services, Professor Abramson predicted.

The communication satellute business in the US was booming.

A whole series of new satellite based services had already emerged, ranging from large hotel chains interested in video conferencing for businessmen, through to nationally broadcast training programs for hospital staff.

Other services included electronic banking, church education networks, remote publishing, electronic mail, private television broadcasting and high speed data communications for data processing.

These new business opportunities and the local implications of the introduction of Australia's own communications satellite will be discussed next week by Professor Abramson in a series of briefings to the Australian business community at the Sydney Hilton and Melbourne Hilton on November 19 and 21.

While covering the key technological and socio-economic issues, he will emphasise the business implications, of the Australian satellite.

Details of the briefings may be obtained from Technology Education Associates on 02-212-4199.

CSO: 5500

INDUSTRY USING U.S.-DEVELOPED ELECTRONIC PHONE SYSTEM

Canberra THE FINANCIAL AUSTRALIAN in English 4 Nov 80 p 12

[Text] ANSETT Transport Industries has switched to a new $1.5 million electronic telephone PABX and queuing system, said to be the most sophisticated of its kind ever installed in Australia.

The system was installed in ATI's new Melbourne headquarters last week and a similar system will be installed in its Sydney office in January.

The Dimension R Custom 2000 system is made by Western Electric in the US and supplied in Australia by AWA.

Licence

AWA will manufacture subsequent Dimension 2000 systems under licence in Australia for Bell Laboratories.

The system allows extra telephone extensions to come into use in any area when the telephone load increases.

Incoming calls are queued in order of arrival, and the PABX can receive 195 simultaneous calls before anyone receives an engaged signal.

Queuing and PABX facilities are integrated in the system--a feature not previously available in Australia, according to Ansett.

The system has 2000 extensions. In the short term it can be expanded to 5000 lines and in the long term to 20,000 lines.

The Dimension 2000 range is an electronic system using stored program control and time division switching.

Ansett said that as well as speeding the answering service to the public, the system would provide many time saving features for ATI's internal operations, such as automatic call-back, redirection of calls, conference facilities, push button dialling, identification of caller, office changes and provision for taking calls in another office.

Information

Mr Bruce McLennan, Ansett Airlines' manager for service facilities, said the new system also created better staff utilisation.

"Information on all calls is automatically graphed on a real-time color display, which tells us the busiest periods and how long people have waited.

"With that information we can then plan our staff for the next day on an hourly basis," he said.

The system can be linked to Western Electric in Denver, Colorado, and to AWA in Redfern for diagnostic tests.

CSO: 5500

BRIEFS

TV TAKEOVER BID--Wellington--Australian involvement in New Zealand television could result if plans for a private takeover of an existing channel go ahead. The takeover bid by Alternative Television Network Ltd., disclosed yesterday, was criticised as grandiose and monolithic by Mr H.M. Horton, managing director of Wilson and Horton Ltd, Auckland publishers of the NEW ZEALAND HERALD. On Friday the publishers said they intended to lodge an application for a television broadcasting warrant. Mr Horton said ATN had a substantial element of overseas ownership: its composition included Independent Newspapers Ltd., which was virtually a subsidiary of News Ltd. of Sydney and Radio Hauraki, which had links with Consolidated Press of Australia. Both the Government and the opposition Labor Party are sceptical of ATN's plans. ATN said it planned to go to air in February, 1982, but Mr Templeton said he did not see how that would be possible. A State corporation runs New Zealand's existing two channels. [Text] [Melbourne THE AGE in English 6 Nov 80 p 23]

CSO: 5500

DACCA PLAN FOR THIRD WORLD MEDIA REPORTED

Dacca THE BANGLADESH OBSERVER in English 26 Nov 80 pp 1, 12

[Text] New York Nov. 24:--Bangladesh presented at the United Nations a six-point recommendation for the development of the existing information and communication situation in the developing countries. The recommendation are: The developing countries should be adequagely represented in the Department of Public Information of the UN; journalists and broadcasters from developing countries should be provided with training facilities by the UN; there should be co-production of films and television programmes between the UN Department of Public Information and networks of developing countries as well as technical support in development of communications in the developing countries; extensive public information programme should be undertaken for the UN Conference on Least Developed Countries to be held in September 1981; Bengali should be recognised as a language for programmes in the UN Radio Service and serious consideration should be given to the question of establishing a UN information centre in Dacca.

This was stated by Dr. Saituddin Joarder, a member of Bangladesh delegation to the 35th Session of the UN General Assembly, on November 20 when he was participating in a debate in the Special Political Committee on the questions relating to information. He reiterated Bangladesh's close interest in the UN and other information activities was based on the belief in the fundamental contribution that the information media and mass communications could make to the establishment of the new international economic order, strengthening of peace and understanding, and other international goals and objectives. He emphasised that there was a predominant need to change the dependent status of the developing countries in information and communication fields. A right direction to the UN Public Information policies and activities was especially vital to the dependent status of the decause establishment of the new information order was closely linked with establishment of new international economic order, he added.

Bangladesh representative attached particular importance to the need for an equitable geographical distribution of personnel in the UN Department of Public Information and a linguistic balance in the dissemination of information. He said that an equitable distribution of higher and decision-making positions could give the developing countries a greater voice in the activities of the Department of Public Information commensurate with the important role being played by them in international relations. Regarding linguistic balance, he emphasised that use of regional languages in UN information materials would bring the activities of the world body closer to various

peoples of the world. He registered his disappointment as exclusion of Bengali from the languages of Asian unit of the UN Radio Service. Bengali, which is one of the richest languages of the world, was spoken by nearly 13 million people of Bangladesh and other countries of South Asia, he added. He also said that Bangladesh would welcome inclusion of Bangladeshi newspapers in the list for publication of the international supplements of the United Nations.

Bangladesh representative strongly urged that special training programme and technical assistance in the field of information and communication should be made available by the UN system to the developing countries. More journalists from these countries should be provided with opportunity to observe not only the UN Conference but also the UN operations and activities in the field.

CSO: 5500

GANDHI GIVES DETAILS OF COMMUNICATIONS SATELLITE

Calcutta THE STATESMAN in English 27 Nov 80 p 9

[Text] New Delhi, Nov. 26.--Mrs Gandhi told the Lok Sabha today that India's first communication satellite, Apple, was ready for launching and that, "as of now", the take-off was expected in April next year.

Stating this in a written answer to a question she added that the satellite had been designed entirely by Indian scientists. Its main feature was that it was this country's first experimental co-stationary communications technology satellite. "The total expenditure on this project is Rs 15.63 crores", she added.

In a detailed answer to another question, on the performance and future programme of satellites, the Prime Minister made the following points: Three satellites designed and built by Indian scientists and technologists have been launched so far. These are the Arvabhata, Bhaskara and Rohini. The first two were launched from a Soviet consmodrome while the last named Rohini, was launched from Sriharikota, India.

All the on-board technological sub-systems of these satellites in orbit have continued to function and perform normally. Aryabhata has established India's capability in the design and fabrication of satellites. Bhaskara has provided valuable television pictures of the country and microwave radiometre data. These are being used in some applications related to forestry, snowmelting, land use, meteorology and sea surface studies. The Rohini satellite is a technological one to evaluate the performance of the fourth stage of SLV-3 and it has provided useful data on the launch vehicle performance.

As for the future, the following satellites are being made ready for launch: The Apple spacecraft, to be launched by the third developmental flight of the European Space Agency launch vehicle from French Guiana sometime in April 1981.

Geo-II--the second earth observation satellite--which will be similar to Bhaskara, to be launched around mid-1981 and will carry a TV payload and a radiometer.

As part of the Insat-I project, two multi-purpose satellites are being manufactured by the USA and will be launched by that country. These multi-purpose satellites will be used for operational needs of telecommunication meteorology and later for radio and television.

A series of Rohini satellites (RS) oi the 50-kg class will be launched using the subsequent flights of SLV-3. The next launch using the SLV developmental flight is expected to carry a landmark sensor payload and will be launched sometime in the first half of 1981. Details of subsequent satellites of the RS series are yet to be finalized.

In addition, the sixth Five Year plan of the Department of Space envisages the launching of an Indian remote sensing satellite, launching of satellites of the 150-kg class in near earth orbit using an augmented SLV vehicle, launching of the proto-lusat spacecraft system for proving the indigenous spacecraft designed for eventually replacing Insat-I procured from abroad and the launching of satellite of the 600-kg class in sun-synchronous orbit for remote sensing. "Proposals regarding sixth Five year plans are under finalization".

CSO: 5500

LACK OF GROWTH IN COMMUNICATIONS DEPLORED

Bombay THE TIMES OF INDIA in English 22 Nov 80 p 15

[Text] Bombay, November 21: There was a woeful lack of communications growth in this country and the electronics industry was generations behind that in developed nations, Mr Prakash L. Tandon, president of the board of governors of the National Council of Applied Economic Research, said here today.

Delivering the keynote address at a seminar on "Role of TV for economic growth and social change" organised by the Indian Society of Advertisers, he said a proposal to convert Bombay into an offshore transnational banking centre had to be shelved mainly because of the communications bottleneck.

High finance called for split-second transmission of information and any change in the money market in Bombay would have to be cabled or transmitted to other centres like London, New York, Frankfurt, Hong Kong and Singapore within three seconds.

He testified that during a recent swing through South-East Asia he found communications there to be up-to-date whereas in India it was that of the 1950's.

Sponsored Items

Mr Tandon suggested that industry could become a partner of the government in defraying the cost of development by making TV pay for itself. He favoured that greater treatment should be given to sponsored programmes and, in this regard, the advertising community should shoulder a broader task of spreading information and education.

He felt that this backwardness in communications had inhibited the growth of other sectors and was slowing industrial and economic progress.

Mr Harish Mahindra, chairman of the society, said out of 160 countries having TV facilities, only 18, including India, had black and white systems. Many developing countries had switched over to colour TV fully or partially.

He believed that if colour TV was to be introduced, why not right away? The country could not be left to bob in the backwash of technology, especially when it has all the necessary infrastructure. Moreover, the country had the third largest scientifically and technically qualified personnel to effect the transformation.

Mr Mahindra estimated that the cost of switching over to colour TV would be about Rs 31 crores, that of a colour TV set Rs 8,300 and that of producing a colour TV programme Rs 10,000 (against Rs 8,000 for black and white).

He opined that against the cost and drawbacks of the two systems of TV intangibles like the substantial increase in the appeal of the TV message and programmes would have to be taken into account.

Case of Farmers

Separate channels for different segments of society such as agriculturists, small-scale industrialists, school children and other categories should be provided to achieve the objectives of a TV system.

He cited the example of agriculturists, who, though unschooled, grasped what was screened on TV on account of the audio-visual nature of the medium, proving the fact that lessons imparted on TV were more easily absorbed.

The TV network in the country consisted of eight stations, three relay stations and seven SITE transmitters covering a population of 83 million --48 million rural and 35 million urban.

He pointed out that in terms of percentage of national income advertisement expenditure in developed countries was over three per cent and in India something like 0.164 per cent in 1978.

For obvious reasons, he said, the press took the lion's share of 66 per cent of the overall expenditure whereas radio, TV and cinema received only 15 per cent.

Coverage Survey

Mr Mahindra said a recent survey of audience coverage of different media shows that the press reached as much as 53 per cent, radio 46 per cent, the cinema 43 per cent and TV a bare four per cent.

Mr Yusuf A. Fazalbhoy, who proposed a vote of thanks said papers and proposals should not only be prepared and published but should be pushed through as well.

He went on to cite examples of cases when he himself had prepared position papers but these were put in cold storage rather than discussed.

CSO: 5500

SPACE AGENCY PLANS TO LAUNCH OWN SATELLITE BY 1983

BK140910 Delhi Domestic Service in English 0830 GMT 14 Dec 80

[Text] The center has approved the plan to achieve self-sufficiency in space technology in the 80's. The plan prepared by the Indian Space Research Organization [ISRO] envisages an expenditure of 8 billion rupees. ISRO Chairman Prof Satish Dhawan told a group of journalists that the plan includes the projects of the advance satellite launch vehicle [SLV] and the polar satellite launch vehicle. The advance satellite launch vehicle, to be completed by 1983, will be able to put into orbit satellites of the 15 kg class. The polar satellite launch vehicle can put into orbit 600 kg satellites. The weight of this vehicle will be 330 tons against the SLV's weight of only 17 tons. Both of the new launch vehicles will have capabilities to go higher than SLV-3. Prof Dhawan described the development of these satellite launch vehicles as a giant step in launch vehicle space technology.

All India Radio Bangalore correspondent (M. Margeveyyapa), who visited the space centers in Ahmedabada, Sriharikota, Trivandruim and Bangalore along with other members of the a group of journalists, says that the most important (?success) from the space program is a batch of young scientists and engineers with a high degree of sophisticated space technology.

CSO: 5500

BRIEFS

RADIO NETWORK, TV SERVICES EXPANDED--The All India Radio Network is being strengthened. Ten new radio stations are to be set up during the sixth plan period. Development of a national channel and setting up of a large number of local radio stations with low power medium wave and FM transmitters is also proposed during the period. Television services are also being expanded. The new scheme envisages the setting up of relay transmitters on the routes of P and T [no expansion] microwave length. The Indian National Satellite, which is to be launched in 1982, will also be made use of for this purpose. [Text] [BK271105 Delhi General Overseas Service in English 1000 GMT 27 Dec 80]

CSO: 5500

JAMMING DETECTION STATION ON OKINAWA DESCRIBED

OW280945 Naha RYUKYU SHIMPO in Japanese 28 Dec 80 morning edition p 13

[Text] It was 2 years ago that a doppler-formula radio wave bearing measurement facility, developed by Japan and the world's first, was set up on Ishigaki Island. Since then, the facility has displayed its merits and made great achievements in catching and measuring the bearings of interfering (jamming) radio waves emitted from foreign countries. According to a tabulation by the Okinawa Posts and Telecommunications Management Office, a total of 918 radio waves had their bearings measured by the facility between April and 24 December 1980, and 11 waves were found to be interfering with those emanating from Japan. In each case, action was taken to request the country concerned to remove the interfering waves. Okinawa has a radio station for ionospheric observation which belongs to the Okinawa Radio Wave Observatory under the Posts and Telecommunications Ministry. It also has a manmade satellite tracking radio station under the control of the National Space Development Agency's Okinawa tracking control office. Thus, Okinawa occupies an important position in Japan's radio wave administration.

Before the installation of the Ishigaki station, Japan had four radio wave bearing measurement stations located in Hokkaido, Kanto, Kinki, and Kumamoto. They measured bearings of the radio waves emanating from China, Korea, the Soviet Union and various other countries. When interfering waves were detected, the stations asked the countries concerned to halt transmission of the waves, thereby protecting Japan's radio communications from disturbances by foreign radio waves.

However, because the stations were still insufficient for measurement operations and because accuracy needed to be improved, a doppler-formula facility was set up in November 1978 on Ishigaki Island, which is the nearest to Mainland China. With the establishment of this station, which represents Japan's highest technology, the range of the measurement area has substantially widened and the accuracy of the measurement has been conspicuously improved.

The Ishigaki station is located at Shiraho Yonabaru in Ishigaki City. It is an unmanned station and is operated by remote control from the Okinawa Posts and Telecommunications Management Office in Naha.

The following figures show numbers of foreign radio waves measured by the station in pertinent months in 1980: 241 waves in April; 2 waves in May; 44 waves in June; 128 waves in July; 80 waves in August; 76 waves in September; 121 waves in October; 101 waves in November; 125 waves in December. Of a total of 918 waves

measured, 11 were found to be interfering with and disturbing radio waves emanating from Japan. Requests were made to the authorities concerned in the pertinent countries for action to remove interfering waves.

At present, the station reportedly is not engaged in measuring the bearings of jamming waves transmitted for political and military purposes. It is said that the station often finds interfering waves from countries which do not participate in an international treaty that allots radio waves to its signatories. Those waves are said to be mostly from China (including Taiwan), Korea and the Soviet Union.

CSO: 5500

BRIEFS

NEI MONGGOL TV SETS--Hohhot, 23 Dec (XINHUA)--"Swan" brand televisions manufactured in the Nei Monggol autonomous region were best sellers in north and northeast China in the second half of this year. The 12-inch black and white sets are suited to weak signals and 160 to 240 volts. Those on stock for a recent sales exhibition in Tianjin all sold out. Nei Monggol's industry is relatively underdeveloped, though remarkable progress has been made since 1949. The region's broadcast equipment factory was the country's first TV plant set up in a minority people's area. It has 25 quality control groups of technicians and skilled workers. The factory's annual production capacity is now 30,000 to 50,000 sets, but it will increase to 100,000 when two new assembly lines go into operation. The factory also has succeeded in manufacturing double-audio TV sets, and plans to begin manufacturing color and large-screen sets soon. [Text] [OW271337 Beijing XINHUA in English 0704 GMT 23 Dec 80]

CSO: 5500

BRIEFS

TELECOMMUNICATIONS IMPROVEMENTS--Prague, 28 Dec (CETEKA)--The telephone and telecommunication system has greatly improved in Czechoslovakia in the past 5 years. The number of telephones increased by more than 480,000 and their density per 100 inhabitants increased from 17.6 to 20.3. Czechoslovakia has automatic telephone connections with all European countries and the automatic dialing system between towns, too, has been improved. Several television transmitters have been built in the present 5-year term and 75 percent of the country's territory is covered by the second channel signal. Three powerful radio transmitters allowing better reception have been built. The postal service, too, has been modernized. Mail processing is mechanized and automated. An automatic mail sorting line has been in operation in Prague for more than a year. [Text] [LD290228 Prague CTK in English 1808 GMT 28 Dec 80]

CSO: 5500

BRIEFS

SATELLITE COMMUNICATIONS INSTALLED--A new phase in Mexican telecommunications has begun. In this new phase, the (Ilisawa) domestic satellite will be used for national telephone, television and data transmissions. The new phase began with the installation of the first ground station in the city of Tijuana. [Text] [PA161735 Mexico City International Service in Spanish 0300 GMT 16 Dec 80]

CSO: 5500

BRIEFS

MOROCCAN, TUNISIAN TELEGRAPH LINE--Tunis, 19 Dec (MAP)--A second direct telegraphic line linking, in duplex, the Tunisian news agency "TAP" and the Moroccan news agency "MAP" was put into service Thursday morning. This new line, added to the one already established a few years ago, will allow both agencies to exchange the whole of their respective national and international news services in Arabic. This further reinforcement of bilateral cooperation comes on the eve of the official visit Moroccan Premier and Minister of Justice Maati Bouabid is to undertake to Tunisia, and is part of the cooperation in the Maghreb. [Text] [LD221354 Rabat MAP in English 1224 GMT 19 Dec 80]

CSO: 5500

BRIEFS

REBELS FORM NEWS AGENCY--Islamabad, 27 Dec (AFP)--An Afghan rebel news agency announced it was going into business today. The organization, which aims at double-checking and distributing information transmitted from Afghanistan by the Moslem resistance to President Babrak Karmal's Kabul government, calls itself the Afghan Press Agency. It is headed by a former Kabul Civil Aviation Ministry official, Tanzeem Wasti, and Pakistani newspaperman Muktar Hassan, who was held in a Kabul prison for 3 months early this year. The new agency will have its headquarters in London and bureaus in Peshawar and Rawalpindi, Pakistan, as well as in India and Iran. In its first feature distributed here today, the agency said the fighting in Afghanistan had caused 500,000 dead among the civilian population and that 130,000 opponents of the Karmal regime were currently detained in that country's jails. [Text] [OW272226 Hong Kong AFP in English 2210 GMT 27 Dec 80]

CSO: 5500

BRIEFS

SATELLITE TRACKING STATION--Aden, 12 Dec (ANA)--The artificial satellite tracking ground station will begin operation during the first half of next year, declared Brother Kamal 'Abd ar-Rahim, the director general of the Yemeni Telecommunications Authority on his return to Aden from a visit to Algeria yesterday. He said that the delegation held talks with the Algerian brothers concerning the implementation of the ground station project, and he praised the Algerian Government's support for our country. [Text] [Aden ANA in Arabic 1400 GMT 12 Dec 80 LD]

CSO: 5500

BRIEFS

'PANA' INAUGURATION DELAY--The inauguration of the Pan-African News Agency, expected to be operational in two years' time, might be delayed because some countries, including Zambia, have not paid up their subscriptions. But Minister of Information and Broadcasting, Mr Mark Tambatamba, said in Lusaka yesterday that the agency's financial position had improved "considerably" as more countries had paid. He was speaking on arrival at Lusaka International Airport from Dakar, Senegal, where he attended the preparatory technical, finance and expert committee meetings from November 17 to December 3. Mr Tambatamba, who declined to disclose the subscription fee, said Zambia's failure to pay was the result of her financial constraints and her contributions to "many" international organisations. "However, I must state here that we will pay the money. There is no need to be pessimistic about that. We are, after all, looking forward to the day when PANA will start. We would not like to delay things." Mr Tambatamba said technical data on the operation of the agency had already been collected and the finance committee met to iron out loopholes that existed since the announcement in 1979. After the ground work was done, recommendations by various preparatory committees would be submitted to the intergovernmental council and the conference of ministers, the last body to adopt or reject the proposals. [Excerpt] [Lusaka TIMES OF ZAMBIA in English 8 Dec 80 p 1]

CSO: 5500

BRIEFS

BAMENDA RADIO STATION--The Government has decided to build a modern radio station in Bamenda. Disclosing this in Bamenda last week, the Minister of Information and Culture, Mr Guillaume Bwele announced amidst applause that the sum of 20 million francs CFA was already available for a topographical survey of the proposed site which is situated near the Bameda Central Divisional Office. Mr Bwele said the present Ramenda Radio Station just built will serve merely as a temporary measure. He congratulated the engineer, Mr Chrysantus Ndikintum and the contractors for their high sense of initiative and creativity in constructing the station in record time and at low cost. The North-West was the only of the seven provinces of the United Republic without a radio station. In May 1979, the Government provided a recording studio in Bamenda. Work on a one kilowatt Radio Station was completed about a month ago and the Station has been running test broadcasts to the Bamenda Urban Town and its environs. [By Martin A. Nkemngu] [Excerpt] [Yaounde CAMEROON TRIBUNE in English 19 Nov 80 pp 1, 3]

CSO: 5500

BRIEFS

EDUCATIONAL RADIO--Debre Markos--An educational ratio station is under construction in Eraba locality in the vicinity of Debre Markos town of Gojjam Region. Comrade Demtse Gebre-Medhin, the Deputy Administrator of the Region, and other officials visited the different sections of the station on Monday. Comrade Atnafu Eshete, the representative of the station, told the visitors that the construction work will be completed in two months time. The station has the capacity of covering a radius of 100 kms. [Text] [Addis Ababa THE ETHIOPIAN HERALD in English 3 Dec 80 p 8]

CSO: 5500

BRIEFS

NEW 120-CHANNEL SYSTEMS--Philips' Telecommunications Industries in Hilversum, Netherlands, has received an order from the Kenya Government for telecommunications equipment for a project in north-western Kenya. The equipment, worth 10 million guilders, is a radio-relay system for transmission of telephony and audio-programme signals. The project comprises a 450 km. long radio-relay network between Kitale and Lokichoggio, on the Sudanese border, with a spur route to Loikitaung. The network will be equipped with 120-channel multiplex and programme equipment and GTE (Milan) 120-channel UHF duplicated radio-relay equipment. Philips will also provide the required DC power supply systems. The order also includes the training of a number of instructors employed by the Kenya Posts and Telecommunications Corporation. The instructors will afterwards give local training on operation and maintenance. [Text] [Nairobi DAILY NATION in English 18 Dec 80 p 5]

CSO: 5500

BRIEFS

SATELLITE COMMUNICATION STATION--Maseru--Work is to start soon on Lesotho's R6-million satellite communication station, a spokesman for the Ministry of Transport and Communications announced in Maseru yesterday. The station is expected to be operational towards the end of 1981, and will replace the communications link between Maseru and Nairobi, which has been put out of action through lightning and "manpower difficulties."--Sapa. [Text] [Johannesburg THE CITIZEN in English 10 Dec 80 p 8]

CSO: 5500

STATES TO BE GRANTED WAVE LENGTHS SOON

Lagos DAILY TIMES in English 16 Dec 80 p 1

[Article by Tunde Amao]

[Text]

PRESIDENT Shehu Shagari has announced that the Federal Government would now grant wave lengths to states so they can operate television services.

In a key-note address read on his behalf by the Vice-President, Dr. Alex Ekwueme, at the third yearly convention of the NPN in Kano, President Shagari disclosed that a meeting of all states concerned would be called soon to work out the system for sharing wavelengths.

According to him, the Federal Government had not opposed state ownership of television stations. But he said the problem was that there were not enough wave lengths to go round all the states.

President Shagari also disclosed that the government was putting final touches to the plan to set up a new national Press council, to regulate the practice of journalism in Nigeria in a "climate of increased Press freedom".

Stressing the key to his administration's industrialisation programme, President Shagari re-affirmed that nothing would be allowed to stand in the way of the commissioning of the steel plant in 1983.

Now, he said, the constructions of the steel plants at Ajaokuta, Aladja, Katsina, Jos and Oshogbo were going on simultaneously and were already far advanced.

All these, he emphasised, would provide the technological base for "our take-off into the modern age", apart from providing employment for about 4,000 highly trained Nigerians who would be products of our universities, research institutions and colleges of technology.

President Shagari announced that his administration had also completed plans for giving the nation an entirely new railway system, based on the standard gauge.

Dr. Ekwueme arrived back in Lagos yesterday.

CSO: 5500

BRIEFS

ONDO STATE TELEVISION--Arrangements are underway to establish Ondo State Television Station. Governor Michael Ajasin disclosed this to newsmen at the Murtala Muhammed Airport, Ikeja on his arrival from Kaduna, where he had gone to attend the meeting of nine governors. He said his government has already applied to the Federal Government and that as soon as allocation was made, the state's Broadcasting Corporation would go ahead to purchase necessary equipment. Answering a reporter's question, the governor said he was happy with the performance of NTV, Akure, but was pessimistic that it would continue to play its present balanced role in the future. [Excerpt] [Kaduna NEW NIGERIAN in English 8 Dec 80 p 15]

TELEVISION AUTHORITY REORGANIZATION--Nigerian Television Authority (NTA), is to be re-organised to make for quality production and general efficiency, the Presidential Adviser on Information, Chief Olu Adebanjo, said in Kaduna on Thursday. He said that under the proposed re-structuring, television stations throughout the country would be granted a certain degree of autonomy in their daily operations. Chief Adebanjo, who was addressing both the management staff of Zone "D" and those of NTA Kaduna, said that since state governments were anxious to set up television stations, it was mandatory for the Federal Government to guarantee the existence of the present NTA stations as well as the new ones. The special adviser announced that the Federal Government had awarded a contract for the construction of the switching centre for Zone "D" of the NTA, adding that more equipment would be purchased to revitalise some stations. He explained that the delay in setting up the boards of the NTA was due to the proposed re-organisation. The special adviser said that at the moment, an interim board had been set up to oversee the affairs of the authority, pending the re-organisation of the various zonal boards. Chief Adebanjo directed the management of the older stations of the NTA to be prepared to co-operate with state governments in establishing their own stations whenever they were approached. [Text] [Kaduna NEW NIGERIAN in English 13 Dec 80 p 7]

PRIVATELY-OWNED RADIO--Private radio stations should not be allowed in the country at this stage of our country's development, the director-general of the Federal Radio Corporation of Nigeria (FRCN), Mr. George Bako, has warned. He said in Ibadan that this would neither help nation-building nor the people themselves. Mr. Bako then stated that emphasis should be placed on public service broadcasting to educate the people and forge unity among the populace. The director-general, who was the guest on the radio O-Y-O programme, "Meeting Point," however frowned at the idea of lumping broadcasting and allied professions within the structure of the civil service together. [Text] [Lagos DAILY TIMES in English 16 Dec 80 p 5]

KAFANCHAN RADIO STATION, KADUNA--The minority Chief Whip in the Kaduna State House of Assembly Mr. Kure Malam has expressed gratitude to the state government for establishing a radio sub-station in Kafanchan of Jema'a Local Government area. This was contained in a release he issued recently after the formal commissioning of the station last Friday. Mr. Malam said the barrier which blocked many tribes in Southern Zaria from knowing most of the activities of their state government has thus been removed. He expressed his sincere gratitude to the state government and called for the immediate translation of news items into all the major languages in the area. [Samaila Adamu] [Excerpt] [Kaduna NEW NIGERIAN in English 3 Dec 80 p 7]

CSO: 5500

BRIEFS

ALGERIAN TELECOMMUNICATIONS ASSISTANCE--An earth station for telecommunications was given by Algeria to the Republic of Sao Tome and Principe. It is equipped with 12 telephone networks, a telex and one television chain and will initially serve to link the country with Algeria, Angola and Portugal, thus reducing the dependence of the young republic in the field of telecommunications. [Text] [Luanda JORNAL DE ANGOLA in Portuguese 4 Dec 80 p 10]

CSO: 5500

BRIEFS

KINDU EARTH STATION--on 9 November, Elebe Ma Ekonzo, State Commissioner for Information, Culture and Arts, inaugurated the satellite telecommunications earth station in Kindu, seat of Maniema Subregion. This station will make it possible for inhabitants of Kindu to see national television from Kinshasa. [Lubumbashi MJUMBE: LE QUOTINDIEN DU SHABA in French 11 Nov 80 p 1]

REZATELSAT INAUGURATION--On 9 November in N'sele, the State Commissioner for Information, Culture and Arts inaugurated the REZATELSAT [Zairian Satellite Telecommunications Network] in the name of the president of the Republic. REZATELSAT includes a series of 13 stations across the country, thus facilitating contacts between the capital and the interior. [Lubumbashi MJUMBE: LE QUOTIDIEN DU SHABA in French 25 Nov 80 pp 1, 10]

CSO: 5500

SALISBURY FIRM WINS MILITARY COMMUNICATIONS CONTRACT

Salisbury BUSINESS HERALD in English 11 Dec 80 p 1

[Text] A Salisbury electronics company has beaten the world to an important military communications order for two Far Eastern countries. The $3m. contract was won in the face of competition from America, Britain, Germany and Israel.

This is just part of a large-scale export drive by WRS Electronics, which recently also won a $300 000 contract and is expecting a big order from an Eastern European country for some of its commercial products.

Managing director Mr Cecil Schwartz said his firm was investing heavily in research and development and would be spending $250 000 this year on top of $2m. spent in the last four years.

"We are planning to start work in developing the world's first computerised mine detector and could begin on this late next year," he said.

But the company is not going all out on export orders to the detriment of the home market and is keeping a strong presence in this country. "It is impossible to rely completely on export," said Mr Schwartz, "as they cannot generate enough money to pay for research and development work."

An additional bonus for this country resulting from the export orders is more job opportunities.

Besides the extra jobs created by the Far East order, 250 vacancies will be created if the company gets the East European order.

However, the shortage of skilled staff is worrying Mr Schwartz. In the last year, 52 engineers and technicians have left the company and he says work could be held up if many more leave.

CSO: 5500

COMMUNICATIONS WORKERS CONGRATULATED

LD262022 Moscow Domestic Service in Russian 1600 GMT 26 Dec 80

[Text] Leonid Ilich Brezhnev has heartily congratulated the workers, the engineering-technical staff and office workers of the enterprises and organizations of the USSR Communications Ministry on a great labor victory, the fulfillment ahead of schedule of the tasks envisaged by the main guidelines for the development of the national economy for the 10th 5-year plan.

As a result of your selfless labor, the greeting states, a new and considerable step has been taken in the years of the 5-year plan in the development and improvement of the country's communications equipment. The scales have been expanded for technical equipment and the construction of communications enterprises in operation. The task has been overfulfilled for growth in labor productivity.

The length of intercity telephone channels based on modern cable, radio-rely communication lines has increased 1.9 fold. A year ahead of the established schedule, the task was fulfilled in increasing the network for reception of columns of the central newspapers transmitted by the phototelegraphic method from Moscow to the country's major industrial centers.

Work has been implemented to develop the material base of radio broadcasting and television. New systems have been created for broadcasting television programs using artificial earth satellites.

Line radio broadcasting has received further development. The quantity of radio points increased (?1.5) times.

More than 500,000 telephones above the 5-year plan were installed in towns and rural areas.

Internal telephone communications were reconstructed for more than 16,000 sovkhozes and kolkhozes.

Your successes in the development of communications facilities, the greeting states, are a result of a great labor upsurge, of the organizational and political education work of the party, trade union and komsomol organizations and of the widespread socialist competition for implementing the decisions of the 25th CPSU Central Committee Congress. Responsible tasks lie ahead of you in the forthcoming 5-year

period to provide the national economy and population with modern communications television and radio facilities, and to increase reliability in their work.

Leonid Ilich Brezhnev expressed the firm conviction that the collectives of the enterprises and organizations of the ministry, making efficient use of the achievements of science and technology, will continue persistently to fight for the fulfillment of the party decisions on the further accelerated development of communications comprehensive increase in the quality of their work and a fuller satisfaction of the needs of the national economy and population for communications services, worthily seeing in the 26th CPSU Congress.

CSO: 5500

BRIEFS

TELEVISION RELAY--A powerful new television relay has been made operational a year ahead of schedule in the upper Kama area of northeast Perm Oblast. It will relay the first program of central television. [Text] [LD290714 Moscow Domestic Service in Russian 0500 GMT 29 Dec 80]

CSO: 5500

NORDIC MINISTERS AGREE TO CONTINUE NORDSAT STUDY

Copenhagen BERLINGSKE TIDENDE in Danish 22 Nov 80 p 7

[Article by Jens Thomsen]

[Text] The plans for a joint Nordic TV satellite have not yet been shelved. But Nordsat will not be brought into orbit over Scandinavia until 1983, at the earliest, when a German TV satellite will already be in orbit.

At a meeting with the Nordic ministers of cultural affairs, transport and education in Copenhagen last Friday, Minister of Cultural Affairs Lise Østergaard stated that it had been agreed to continue the Nordsat study, and that it was endeavored to reach Nordic agreement by the end of 1981.

None of the Nordic ministers participating in the council meeting in Copenhagen had wanted to reject the Nordsat project definitively. However, Icelandic permanent undersecretary Birger Thorlacius conceded that Iceland will probably reach a final decision on the matter today. The Icelandic Society of Authors, among others, had opposed the Nordsat project.

"Now we want instead to view the matter positively and to study it carefully," Birger Thorlacius added.

Yes and a Conditional Yes

The Swedish Minister of Education Jan-Erik Wikstrom simplified the views of the Nordic countries by saying:

1. Norway clearly answers yes;
2. Denmark and Finland answer yes conditionally:
3. Sweden cannot answer yes, but will not answer no either.

The official report on the council meeting of Nordic ministers on Nordsat states that, in the opinion of the council of ministers, a dissemination of

the radio and TV programs of the individual countries will considerably further the mutual interest in, and the knowledge of, the Nordic neighboring countries, and will increase the possibility of ethnic and minority language groups to participate in the common cultural and informative programs in their own languages. But there are still problems which require closer evaluation, such as the number of satellite channels, their distribution, the question of advertising, and the level of translations as well as the distribution of the costs of the satellite. The project also holds certain industrial policy possibilities, the council of ministers said.

Many Possibilities

Lise Østergaard said that the technological development within the area of TV satellites is so fast that it is today impossible to assess all of the possibilities.

If the council of Nordic ministers succeeds in reaching an agreement to orbit Nordsat by the end of 1981, the parliaments of the individual countries will, on the basis of budgetary evaluations, reach the final decision, whereupon it will be possible to take up the next phase, the technical aspects of the project. The final orbiting of the satellite is not expected to take place until 1983-85.

7262
CSO: 5500

BRIEFS

FIBER-OPTIC CABLE TESTED--Yesterday, the Copenhagen Telephone Company Inc privately tested a new telephone technique which is called the fiber-optic cable technique. So far our telephone talks have been transmitted as electric impulses via copper wires. But, in the future, they will be sent as optic impulses via glass fiber wires as thin as human hair. The quality of the talks will be considerably improved, seeing that the glass fiber wires are made of a material of a very high degree of purity. And, in the long run, it will also be less costly, for glass is a considerably less expensive and more common substance than copper. With the new fiber-optic cable technology, we shall find that it will be more pleasant to talk on the telephone. The thin wires of glass fiber and the minilaser beams passing through them are not affected by noise, for example from electric transmission lines and railroads. In other places in Europe, they are still at the stage of research, and the reason why the Copenhagen Telephone Company Inc. decided to test the new technique in practice was, as stated by H. Borup, chief engineer, "So far, the new technology has been in the hands of experts and has been under constant observation. The cables and the equipment will now be handled--and perhaps mishandled--by people in practice. We shall then see if the glittering promises will hold." [Text] [Copenhagen BERLINGSKE TIDENDE in Danish 14 Nov 80 p 5] 7262

CSO: 5500

BROADBAND GLASS CABLE SYSTEM TESTED IN BERLIN

West Berlin DER TAGESSPIEGEL in German 6 Dec 80 p 15

[Article by Wolf Buchwald: "Fiber Optics Premier in Berlin"]

[Text] Berlin has the first broad-band fiber-optics communication system in Europe. Since 1136 yesterday the occupants--with appropriate equipment, video camera and television set--of the 24 houses in Wilmersdorf now connected can call one another on the telephone and see the person on the other end of the line of the television screen! Broad-band communications by means of fiber-optics cables, or light wave conductors, means that a host of possibilities is at hand.

Thus radio and televisions programs no longer come through the air via antennas into the house but via fiber-optics cables from a central receiving station. Video and screen text can be received together. Data transmission is a further capability of fiber optics, which by now has been developed to the point where mass production can begin. The first to enjoy the use of this new technology, in addition to the postal system and the firm AEG-Telefunken, which developed the system, are the occupants of the houses Salzbrunner Strasse 48 and Charlottenbrunner Strasse 1 in Berlin-Wilmersdorf. The "fiber-optics central" at Hohenzollerndamm near post office 33 provides them with a total of 6 TV and 14 UHF radio programs. An advantage of the new system is that all present receiving devices can still be used. They are simply coupled to a customer interface unit which connects with the central station where the electrical radio and television signals are converted into optical signals and fed into the fiber-optics system.

In the customer interface unit these optical signals are reconverted into electrical signals and input to the customer's receiver through a coaxial cable, that is the same conductor for input and output; the associated optical conductor requires two separate fibers. The user of the new system needs only a channel selector to make his program selection known to the central station. The channel selector is nothing other than the conventional remote selector of modern television sets. For now the broad-band communication system will be used only for television and radio; but the expansion for telephone or even picture telephone use is already possible today, as is the connection for CRT and video text. In hooking up the Wilmersdorf dwellings, the new system has passed from the laboratory phase into a test of everyday use. The cost for the fiber-optics pilot project comes to about DM 6 million, half of which will be paid by the Federal Post Office and the other half will be borne by AEG-Telefunken.

With the development of fiber-optics technology, a decisive breakthrough was achieved in technical communications. Fiber-optics conductors have nearly a thousandfold greater capability than the conventional copper cable of the postal department. Also the institution of the picture telephone system can now be reconsidered; it was previously abandoned due to costs. Of course, several decades will pass before the broad-band communication can be installed nationwide. In addition to the time required, it will cost about DM 100 billion to wire the FRG including West Berlin with fiber optics. However, it is technically possible today as is being demonstrated in Berlin.

9160
CSO: 5500

LABOR UNION AFFILIATED RADIO STATIONS INCREASE

Paris LE MONDE in French 23 Nov 80 p 19

[Article: "Radio Stations As Weapons"]

[Text] "Radio stations as weapons" today represent one of the weapons of trade union action, in the same way as the distribution of leaflets and the occupation of shops and factories. These radio stations at first were established by the workers themselves, with the agreement--at times with some reservations--of the central trade union bodies. The example of the radio station "Lorraine-Coeur d'Acier" [Lorraine-Heart of the Steel Industry] is the most significant. Situated in Longwy, in the northern part of the Lorraine basin, this radio station, belonging to the local CGT union, rapidly acquired a considerable audience in the region. Directed by two professional journalists and by many people of good will, it has not resumed its broadcasts, prevented from doing so by the CGT itself.[1] If the central organization wants to develop, in a systematic way, these radio stations, the latter must remain, above all, a means of propaganda. The transmissions, moreover, resumed on Monday 17 November. "It is not a matter of establishing a radio station, and priority must be given to debate on the ideas of the CGT."

In Paris a group of CGT technicians provides advice and studies the technical problems of the radio stations. A project for on-the-job training for those entering into operation of such radio stations (stimulation and training) is even envisaged: "Our objective is to provide all regions of the country with a team capable of stimulating and operating a radio station in the search for effectiveness but with the desire to be heard." The CGT already has considerable equipment on the national scale (transmitters with a power of several kilowatts, antennas), and most regions of the country are already equipped with equivalent equipment. Moreover, they are not embarrassed to use audacious techniques: Radio-Quinquin (CGT station in the department of the Nord broadcasting every day) had its antenna, measuring more than 50 meters in length, taken down at the time of its seizure. The transmitter simply was "put under cover." "Seizures only interrupt the broadcasts temporarily, and jamming will give way to much stronger pressure on the part of the workers, who will go into a more active phase of activity," said one of the permanent staff of the central CGT organization.

However, the CGT does not want to see other experiments tried like that of Lorraine-Coeur d'Acier or Radio-Quinquin, which transmit regularly. "Radios as weapons should be reserved for well-timed actions of short duration. This is not a means for rapid action." Relations with the other free radio stations are

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[1] LE MONDE, 5-6 October 1980.

nonexistent, and the central CGT organization even fears the Italian example. A few trade union members have participated in various conferences and meetings--always in a personal capacity--but the CGT remains attached to the idea of a monopoly on radio-television by the state, although very decentralized and permitting "democratic debate."

The CFDT has only undertaken two experiments of this type, one at Longwy (Radio Station "SOS Jobs") and the other, more recently, at Montreuil (Radio-Dufour On Strike), with the help of a few members of the Federation of Free Radio Stations. This is just a matter, in these two cases, of local initiatives, as the CFDT does not want to increase the number of these experiments.

The example of Radio-Dufour well illustrates the problem in which the victims of a prolonged labor conflict find themselves. The CFDT factory section, considering that the publicity given to its point of view in the major media outlets was too limited, has considered what kind of action it might take. "We contacted the people in the free radio stations, who assured us of support, and it almost took an SOS to the central organization to obtain their agreement." Once agreement was obtained, the project developed in a month, and then the first broadcast took place at the Montreuil hiring hall. A program schedule, studio, ideas, contacts...and already the project of establishing a radio station which would support itself was born in the minds of some of the strikers. An organization called the association of friends of Radio-Dufour made it possible to obtain initial financing, and the help of members of the Federation of Free Radio Stations, who provided equipment, made it possible to hope. Seizure of the station occurred a few days after the first broadcast.

There was a false note also, one evening. The announcer was presenting the evening program with a soft and assured voice. At the end of his presentation they made a sign to him: he had forgotten to read the daily statement on the state of negotiations at the Dufour plant.

5170
CSO: 5500

EFFECT OF NEW CITIZEN BAND LAW DISCUSSED

Paris LE POINT in French 24 Nov 80 pp 52-53

[Article by Jean-Michel Gourevitch: "CB-ers: End of the Forbidden Noise"]

[Text] Falcon 92 (alias Daniel Saint-Hamont, of France-Inter) can now call Green Martian (alias Jean-Claude Bourret, of TFI) legally.

Like Squirrel 91 (division inspector with the Paris police) and 150,000 other Frenchmen, the two reporters have succumbed to the bite of the latest radio communications bug: Citizen Band, or CB (pronounced "Cibi").

On Wednesday, the Council of Ministers decided to liberalize the strange regulation that has prohibited, under pain of fine or even imprisonment, the use of transceivers whose sale, however, was perfectly legal.

Unlike the United States (where with tens of millions of sets being sold, CB has become a commonplace way of breaking down one's isolation), in France the bug had remained the perquisite of some 20,000 or so persons who had been smitten with the technique. Over the last year, however, the illegal fanatics have proliferated, defying the controls and prohibitions. In the tiniest of Ain or Lozere villages, antennas were suddenly being erected. A set that allowed one to communicate with strangers could be installed in one's home or car for less than 1,000 francs. Truckers exchanged tips on traffic jams and police radars. A Dordogne fireman had even camouflaged his equipment in the saddlebags of his scooter. And the aggressiveness of importers in liquidating, at cut prices, stocks of these sets that were destined to the United States, where enthusiasm has dampened, help to explain the propagation of the bug.

But the surprise gift presented by the government on Wednesday is poisoned: The standards for the sets now authorized (22 channels, 2 watts, frequency modulation) are not met by any of the sets now being sold in France. So, the "pirates" will have to buy new sets. Furthermore, they will have to obtain licenses (probably 500 francs for 5 years), starting mid-December.

Another consequence of the new regulation is that the new sets will cover shorter distances than did the previous ones. The Ministry of PTT is taking refuge behind the 17 million television sets(which the CB pirates sometimes perturb), and denies that it is seeking to hunt down the CB-ers.

Well, Falcon 92 will now be able to call Green Martian, but it is by no means certain that Green Martian will hear him.

9238
CSO: 5500

END

JPRS 77205

19 January 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 146

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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JPRS 77205

19 January 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 146

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BRIEFS

JAPAN, GREECE AGREEMENT--Today an agreement was signed between the Greek Telecommunications Organization and Japanese technical firms for installation of a third ground satellite station in Thermopilai which will cost 200 million drachmas and will start operating in February 1982. The new satellite station, which will be linked with the fifth satellite of the intersat system which is permanently stationed over the Atlantic Ocean, will significantly improve Greece's telecommunications with the countries of North and South America. [Text] [AT292045 Athens Domestic Service in Greek 1930 GMT 29 Dec 80]

CSO: 5500

BRIEFS

PRC, DPRK RADIO-TV AGREEMENT--Pyongyang, Dec 30 (XINHUA)--An agreement and related appendixes on the use of frequencies for television and frequency-modulated broadcasting in the border areas were initiated here yesterday between China and Korea. A protocol to this effect was signed. These documents were initiated or signed by Lu Keqin, leader of the Chinese Broadcasting Technique delegation and vice-director-general of the Chinese Broadcasting Administrative Bureau, and Chon Tok-Chil, vice-minister of communications and leader of the Korean Broadcasting Technique delegation. The Chinese guests arrived here on December 9. During their stay here, they had friendly talks with their Korean counterparts. The two sides acknowledged each other's long-term development programme and coordinated the use of frequencies of medium wave television and frequency-modulated broadcasting in the border areas between the two countries. Vice-premier of the Administration Council of Korea Kye Ung-Tae received and had a friendly talk with the delegation this afternoon. [Text] [OW301554 Beijing XINHUA in English 1516 GMT 30 Dec 80]

CSO: 5500

BRIEFS

SUMATRA EARTH SATELLITE STATIONS--The government has entrusted the Indonesian Telecommunications Industry Company in Bandung with the const uction of 20 small earth satellite stations in Sumatra for completion in 1981. Almost all the equipment to be installed at the stations will be produced locally, the company director has said. The company has built similar projects in several Indonesian provinces with good result. [BK051147 Jakarta Domestic Service in Indonesian 1200 GMT 1 Jan 81]

CSO: 5500

OKINAWAN PAPER ON JAMMING WAVE DETECTING STATION

OW280945 Naha RYUKYU SHIMPO in Japanese 28 Dec 80 morning edition p 13

[Text] It was 2 years ago that a doppler-formula radio wave bearing measurement facility, developed by Japan and the world's first, was set up on Ishigaki Island. Since then, the facility has displayed its merits and made great achievements in catching and measuring the bearings of interfering (jamming) radio waves emitted from foreign countries. According to a tabulation by the Okinawa Posts and Telecommunications Management Office, a total of 918 radio waves had their bearings measured by the facility between April and 24 December 1980, and 11 waves were found to be interfering with those emanating from Japan. In each case, action was taken to request the country concerned to remove the interfering waves. Okinawa has a radio station for ionospheric observation which belongs to the Okinawa Radio Wave Observatory under the Posts and Telecommunications Ministry. It also has a manmade satellite tracking radio station under the control of the National Space Development Agency's Okinawa Tracking Control Office. Thus, Okinawa occupies an important position in Japan's radio wave administration.

Before the installation of the Ishigaki station, Japan had four radio wave bearing measurement stations located in Hokkaido, Kanto, Kinki, and Kumamoto. They measured bearings of the radio waves emanating from China, Korea, the Soviet Union and various other countries. When interfering waves were detected, the stations asked the countries concerned to halt transmission of the waves, thereby protecting Japan's radio communications from disturbances by foreign radio waves.

However, because the stations were still insufficient for measurement operations and because accuracy needed to be improved, a doppler-formula facility was set up in November 1978 on Ishigaki Island, which is the nearest to mainland China. With the establishment of this station, which represents Japan's highest technology, the range of the measurement area has substantially widened and the accuracy of the measurement has been conspicuously improved.

The Ishigaki station is located at Shiraho Yonabaru in Ishigaki City. It is an unmanned station and is operated by remote control from the Okinawa Posts and Telecommunications Management Office in Naha.

The following figures show numbers of foreign radio waves measured by the station in pertinent months in 1980: 241 waves in April; 2 waves in May; 44 waves in June; 128 waves in July; 80 waves in August; 76 waves in September; 121 waves in October; 101 waves in November; 125 waves in December. Of a total of 918 waves measured,

11 were found to be interfering with and disturbing radio waves emanating from Japan. Requests were made to the authorities concerned in the pertinent countries for action to remove interfering waves.

At present, the station reportedly is not engaged in measuring the bearings of jamming waves transmitted for political and military purposes. It is said that the station often finds interfering waves from countries which do not participate in an international treaty that allots radio waves to its signatories. Those waves are said to be mostly from China (including Taiwan), Korea and the Soviet Union.

CSO: 5500

PROGRESS ON VIENTIANE RADIO STATION, DEGREE OF AUTONOMY, ASSISTANCE NOTED

Vientiane VIENTIANE MAI in Lao 29 Oct 80 p 3

['Conversations With the Editor' Column]

[Text] Dear editor of VIENTIANE MAI,

We would like to ask about Radio Vientiane because we read earlier in VIENTIANE MAI that there were problems with this station. The problems we would like to ask about are:

1. When will the radio station of the City and Province of Vientiane start up and what has been done on it?

2. What is the significance of this station? Is it independent of central control or does it belong to the City of Vientiane?

3. Is there any other country helping in this?

[signed] Bounsong 22/10/80

[Answer] Comrade Bounsong, actually VIENTIANE MAI has already answered questions on the problems of Radio Vientiane, but these were only news reports. Now we would like to make some observations on the developments in question:

1. We cannot give you a definite date but would like to say that it will be before the fifth [National Day] anniversary on 2 December. Right now we have set up almost everything, that is the planning, the organization, and the assembling (the station). Now I believe we are 90 percent complete, and we have broadcast many times in testing with adequate results. The comrade can hear us by turning his dial to 1200. I cannot say what [the broadcast] times are because it is just for adjusting the broadcasting equipment; they do not broadcast every day. Usually they start in the morning and the evening: at 0500 hours and 1900 hours. [The hours] will be announced when the basic tests are completed.

2. It belongs to the City and Province of Vientiane and is the mouthpiece of the Provincial Party Committee. This means that its management is affiliated with the Province of Vientiane but special direction can also come from the central authorities as well.

3. At this initial stage no assistance has been received from the group of friendly nations. Some assistance programs are planned but these are for the future. In any case neighboring experts have supervised and helped us.

8149
CSO: 5500

BRIEFS

SAVANNAKHET WIRED RADIO NETWORKS—At the end of September the Department of Propaganda of Savannakhet Province sent a number of cadre technicians to set up wired radio networks for the administration of Outhoumphon District and Atsaphangthong District in order to expand the mass communications network in their province. These will be used to disseminate the policies and resolutions of party and state as well as provincial authorities quickly and widely. Each system consists of a 250 watt transmitter and 10 speakers which are now being used for mass communications. [Text] [Vientiane KHAOSAN PATHET LAO in Lao 21 Oct 80 pA3] 8149

CSO: 5500

BRIEFS

'YONHAP' NEWS AGENCY FORMED--Seoul Jan 5 (YONHAP)--The YONHAP News Agency, now Korea's only news service agency, went into operation Jan 1, pledging to do its best to fulfill its "profound journalistic mission," and promising "accurate news reporting and fair commentary." In an inaugural message, YONHAP President Kim Song-Chin and the news agency's senior staff members said YONHAP will step up press activity, promoting "vigorous international news exchanges and mutual understanding." Kim's message said YONHAP will live up to its motto calling for contributing to national development and the promotion of culture by displaying creativity befitting a news service agency. YONHAP's birth, in a merger of Orient Press and Haptong News Agency, follows last November's adoption of resolution by the Korean Newspaper Association pledging to reshape the country's journalistic organizations to comply with "the demands of the time." [Text] [SK050124 Seoul YONHAP in English 0108 GMT 5 Jan 81]

CSO: 5500

BRIEFS

PHU KHANH RADIO NETWORK--Phu Khanh Province now has more than 70 wired radio stations, including 52 in the delta and mountainous regions and on offshore islands, with nearly 2,000 loudspeakers to serve the people at various public places and in residential areas. Thanks to the expansion of the wired radio network, the people in all localities in the province have promptly been informed of the policies adopted by the party and the state. [Hanoi Domestic Service in Vietnamese 2300 GMT 1 Jan 81]

CSO: 5500

COMMUNICATIONS SECRETARY DISCUSSES FUTURE PLANS

Buenos Aires LA PRENSA in Spanish 21 Nov 80 p 7

[Text] The communications secretary, Gen Eduardo Corrado, has discussed some future telecommunications projects for Argentina.

He said that at the end of 1982 the National System of Satellite Communications will begin to operate; this will be combined with the national telecommunications network to bring communications to areas that are very hard to reach by any other type of system. It will also bring television or radio signals to border areas that are now not part of the National Radio and Television Broadcasting Network.

This system, he pointed out, will consist of a main station located in Balcarce; two stations located in Catamarca and Comodora Rivadavia, which will be connected with the national long distance telephone system; six alternative ground stations for emergency use; and 24 remote stations, three of which will be located in Argentina Antarctica.

This project, he added, will form a communications system that will enable all the ground stations to be interconnected and to be connected with the general telecommunications network. The system will operate with a transponder and half of an Intelsat satellite.

Rural Telephone System

Later he explained some details of the rural telephone system. This system uses a wireless telephone (radio connection) to contact subscribers who are located up to a maximum distance of approximately 50 kilometers from the base radio station; they are then connected with a telephone exchange, which can provide all the facilities of the national telecommunications system, including national long distance dialing and international service.

Electronics Industry

In speaking of the electronics industry, he said that "an awareness of the vast snowballing effect of electronics development has led nations to promote the use and development of their electronics industries by stimulating and promoting the use of electronics, by investments in research, and by the establishment of purchasing policies.

"For that reason, and also considering the large purchasing power of the communications sector, it will be necessary for us to set clear and precise goals promoting the development of the communications industry in Argentina.

"It is the intention of the department of communications to take part in this modern world and by means of electronics and communications, to help to improve the productive structure of the nation in order to achieve our regional and national goals.

"We are fully aware that the growth of communications will stimulate national development, and without communications, this development will not be possible. That is why the department of communications, in conjunction with the ENTEL [National Telecommunications Company] and the ENCOTEL [National Mail and Telegraph Enterprise] has conducted and is continuing to conduct this vast program, so that in the decade of the 1980's, the nation may be among the most developed in this field."

7679
CSO: 5500

ROCKET LAUNCHING PLATFORM TESTED IN MARAMBIO BASE

Buenos Aires LA PRENSA in Spanish 28 Nov 80 p 16

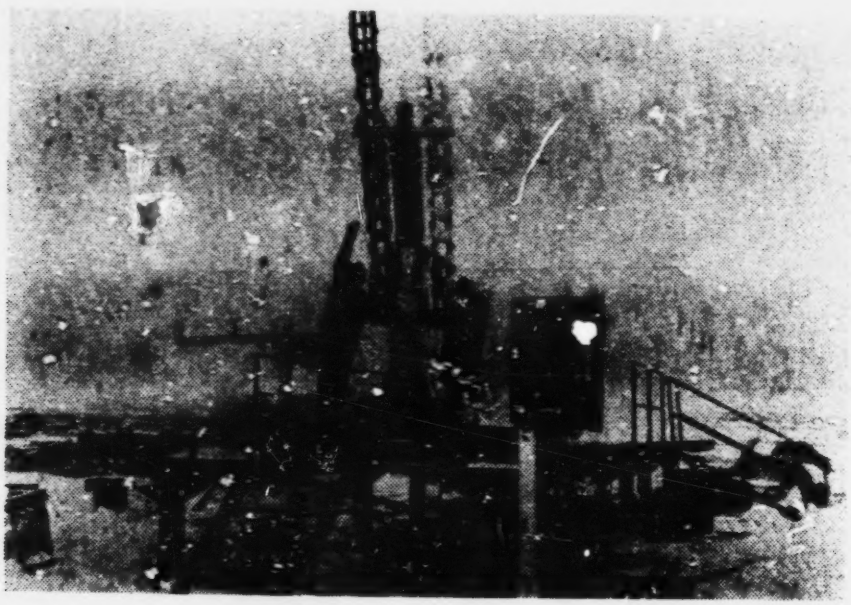
[Text] A new rocket launching platform was inaugurated yesterday at the Commodore Marambio base with the launch of a sounding rocket. This facility belongs to the CNIE [National Commission for Space Research] and is operated under the Argentine Air Force. This facility will be used to take part in international programs for meteorological research in the upper and middle atmosphere.

The inaugural ceremony of the Marambio base was presided by the commander of air operations, Maj Gen Jesus Orlando Capellini, who was accompanied at the ceremony by, among others, the head of the CNIE, Brig Gen Miguel Sanchez Pena; the former air force commanders, Brig Gens Heriberto Ahrens, Angel Jorge Peluffo, Carlos Alberto Rey, Orlando Ramon Agosti, Cayo Antonio Alsina, Juan Francisco Fabri, and Alfredo Juan Vedoya; by top officials of the CNIE, civil servants from organizations involved with aerospace activity, delegations from other armed forces, and a group of reporters from the capital and the interior of the nation.

The Launch Base

The CNIE, as part of a program of international cooperation for the study of the atmosphere, has established this sounding rocket launch facility, which will form part of the CELPA [Rocket Testing and Launching Centers] located at Chamical in La Rioja province and at Mar Chiquita, in Buenos Aires province. This will provide a system suitable for scientific research in the middle and upper atmosphere. The Marambio launch base in the Antarctic will be used to launch rockets with a variety of characteristics: one and two stage rockets with ranges between 65 and 500 km in altitude, with payloads of up to 75 kg. Suitable facilities have been built for these missions: a platform with its launcher, a hangar for assembling the rocket, which will have adequate protection from the harsh Antarctic climate. The launcher is mounted on rails, and once the

rocket is installed in the launching device, it is moved outside where its inclination and direction are adjusted, depending on the atmospheric conditions and the technical requirements of the experiment.



Two technicians determine the launch position of a rocket at the CNIE's Marambio base.

First Launches

The first launches from the new base will use two types of rockets: the smaller has a range of 65 km and the larger has a 75-km range. These rockets carry a payload that is released from the nosecone when it reaches the correct altitude; the payload is then supported by parachutes. It immediately begins to transmit atmospheric parameters: pressure, temperature, wind intensity and direction. These parameters give precise atmospheric data and complement the data obtained from meteorological satellites. In a few months instruments capable of determing ozone levels at different altitudes of the atmosphere will be added. The tracking of the device is done first by using an optical finder and then by a radar antenna with an automatic lock-on device. This receives the coded data which is then processed in the computer center at the base.

The CNIE's Marambio base is now commanded by vice commodore Luis Martinez, the head of the Mar Chiquita base. It has facilities for regulation, a telemetry antenna, and a power generator. The radar, the computer, and telemetry reception systems are located in three buildings.

Scientific Exchange

The program set for the operation of the new launch base, which forms part of the inter-American "Exametnet" system for scientific exchange of meteorological studies, includes, in the first phase, launches twice a month and in the near future, weekly launches, like the ones conducted at Mar Chiquita, with similar objectives. The new CNIE base, located in Argentine Antarctica, has been established to meet a very important need for meteorological data; this is required of the countries participating in this international program.

An operator monitors the launch of a rocket, about to be activated, from a console.

The weather conditions at the Marambio base and the harshness of the environment make the CNIE's new facility a unique achievement; for that reason its scientific contribution will be of special importance for meteorological studies in those latitudes where

factors which determine the climatic conditions in vast sectors of the continent are generated. These highly precise data will provide better security for air and maritime navigation and will improve weather forecasting.

7679
CSO: 5500

FIGUEIREDO TO RECEIVE SATELLITE PLANS FOR APPROVAL

President to Decide

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 9 Dec 80 p 18

[Text] On Monday President Joao Figueiredo will begin to decide the future of the national communications satellite. He is going to receive the studies on the launching of the satellite for final consideration, it was reported yesterday in Sao Paulo by Minister of Communications Haroldo Correia de Mattos. The minister will provide Figueiredo with a summarized version of the plan and he already expresses confidence that work on the satellite will begin next year.

The minister was in Sao Paulo at the invitation of TELESP [Sao Paulo Telecommunications] for a fellowship luncheon. He talked at length with newsmen but did not wish to make any comment on the concession of television channels, which should be announced in coming days. Haroldo de Mattos asserted that he did not recommend any of the companies interested in the concession, believing it to be unethical to utter an opinion. "The position of the Ministry of Communications is the same as that of the Presidency of the Republic," he concluded.

After returning to Brasilia, he will seek information on the charges published by ESTADO last week with respect to the concession of an FM channel to a radiotelephone company which is in debt to INAMPS [National Institute for Social Security Medical Assistance]: Radio Metropolitana Paulista of Mogi das Cruzes owes nearly five million cruzeiros to INAMPS and has already pledged its only transmitter and two telephone instruments as collateral. Regardless, it was the winner at a recent drawing held by the Ministry of Communications. The minister declared that he was unaware of the charges.

The installation of the national communications satellite will take nearly 5 years--the space part--and the minister said he was optimistic about its approval by the president of the republic "who has already shown some receptivity on the subject." That phase should cost between $80 and $85 million, according to estimates by the minister.

Haroldo Correia de Mattos referred to the lack of money several times, but also complained about the delay in the execution of certain projects which have been hampered by the bureaucracy--when more than one agency is involved--and also the loss of time on the consideration of irrelevant subjects. The minister cited rural telephone systems as an example. Part of their planning has been completed

but up to now the first 2,000 service installations have not been made. There is a lack of money--in 1979 the cost was 800 million cruzeiros--and of joint efforts in the execution of the installations.

"A more tenacious handling" of the problem is being sought at this time, according to Haroldo de Mattos, who has already had a meeting with his colleague, Amaury Stabile, the state secretary of agriculture, to speed up the rural telephone system. In view of the lack of money, he advocates the "need to engage in 'mutirao' [an action similar to a barn-raising in which the work is done gratuitously] among the affected entities, ranging from the cooperatives to the companies of the two ministries involved, in short, among all those affected." The minister said: "At a time when the government has decided to give agriculture a high degree of priority, we have to make the best of our efforts toward providing the farmers with that facility. We need to find a way to at least initiate a solution to a problem which afflicts everyone."

In his talk with the newsmen, Haroldo de Mattos also spoke of another project in his ministry, that of mobile telephones to be installed in passenger cars: "That is an inexplicable problem. We have been talking about it for more than a year. We want to put it into practice. There are customers and the Ministry has already issued the rules for regulating the service, but I do not know, the affair arrived at TELEBRAS [Brazilian Telecommunications, Inc] and it becomes a matter of arguing about the sex of angels, what the best system is, which is the most advanced technology. The thing remains in a detestable period of marking time."

The minister of communications also reported that a committee is studying the best way to overcome the problem with the CPA's--Stored Program Centers--so that no manufacturer involved will be harmed because the Ministry of Communications cancelled the orders from three accredited manufacturers. Referring to party lines (use of a telephone line by two users), Mattos said he did not know when the system will be installed in Sao Paulo, adding: "That is a TELESP problem not of the ministry."

Haroldo de Mattos also spoke on the needs for telephones in Brazil: "To balance supply with demand [presumably a line dropped at this point] is much smaller than the first, we would have to contract nearly 600,000 new terminals per year every year for the next 10 years. That would be the number needed for effecting a balance." But there are problems and the business sector itself keenly feels that, according to Correia. "The factories are ready for orders much larger than we are in a condition to make and the solution to the problem is beyond the means of the Ministry of Communications since it depends on a government policy," he concluded.

Communications Minister Speaks

Rio de Janeiro JORNAL DO BRASIL in Portuguese 9 Dec p 17

[Text] Sao Paulo--Minister of Communications Haroldo de Mattos said yesterday that the president of the republic and the Space Activities Committee will receive the studies on the domestic satellite on Monday. "If approved, work could begin in 1981 and the satellite goes into orbit in 1985."

He expects 80 percent of the National Telecommunications Fund will be used in 1981 for investments in the sector and if collections exceed those forecast, the ministry will ask for more, which could then guarantee more than 20 billion cruzeiros, according to projections. Last year, of the 26 billion cruzeiros of the fund, nearly 13 billion cruzeiros went to the sector.

Satellite

The domestic satellite, rural telephone system and mobile telephones, in addition to a decision in the area of the CPA's "which would contain" all of them,--even those which had to do with space--are within the priorities of the government for 1981. Haroldo de Mattos, however, does not like to speak about priorities "because the system needs to grow harmoniously and homogeneously."

Eleven earth stations will be installed on a priority basis in the Amazon Region, Fernando de Noronha and upland virgin forests. He regretted that Argentina "because of political problems in the telecommunications area," cannot participate in the satellite project, "which would reduce costs by at least half by means of joint commercialization."

He also regretted, not the absence of money "but rather because the lack of greater cooperation in various areas," made it impossible to advance more in the rural telephone system in 1980. With respect to mobile telephones, the minister said that it has already been decided that TELEBRAS will not participate with its own money. The company entering the winning bid--the auction will be held soon--will be the one which will be responsible for the installation of the system with the participation of the users.

The minister is not concerned about the financial position of the state companies of the sector--the TELEBRAS System--and said that generally all will end up well. He explained, however, that the companies located in the more needy regions may wind up with some losses and that others in the more prosperous regions should obtain an investment return of around six percent, although that return should be 12 percent.

8908
CSO: 5500

DIGITAL COMMUNICATIONS SYSTEMS SUCCESSFULLY TESTED

Sao Paulo FOLHA DE SAO PAULO in Portuguese 6 Dec 80 p 14

[Article by Maria Cristina Frias: "Digital Communications System in the Country; UNICAMP And TELEBRAS Doing Research"]

[Text] As of next year, a telephone call may be sent with another 29 calls on a single channel with equipment completely built in the country as a result of the research made by the Campinas State University [UNICAMP] and the Research and Development Center (CPqD), an agency of TELEBRAS [Brazilian Telecommunications, Inc] (which is financing the project).

For Brazil, according to Professor Dalton Soares Arantes, chief of the Electrical Engineering Department of the School of Engineering of UNICAMP, the accomplishment of that research and its application in the national telecommunications system could mean the end of the importing of technology and materials in the area of communications, a rationalization of services and, therefore, a great saving.

In a country in which only one of every six inhabitants has a telephone (in the United States there is almost one telephone for every inhabitant), the application of the digital transmission systems is vital, because in addition to allowing a rationalization of services, they are of low installations and maintenance cost.

In those modern systems, explains Professor Arantes, the electrical signal generated in the transmitter is initially coded in binary form, like the signals used in computers, and then transmitted on the channel.

"In the systems now in use in the country in the area of communications--the imported digital systems are just beginning to be adopted--the original electric signal, which may be the voice emitted by a telephone, for example, is transmitted basically in the same form that it was generated at the transmitting source. That is why they are called 'analogical.'"

The researcher adds: "Because they possess those characteristics, the analog systems are disadvantageous by comparison with the digital, because in addition to being more expensive, the fidelity of their transmissions depends on the distance between terminals; the signal emitted in those systems is not immune to

interference, their equipment does not last as long as the equipment used in the digital systems, do not allow the use of integrated and miniaturized digital circuits (which mean greater savings) nor the integration of voice, data and picture signals."

That integration of various types of information in the digital systems takes place, according to the explanation of Professor Dalton Soares Arantes, by means of coding in binary form of each of the signals (voice, television and so forth) and the subsequent passage through a multiplexer which has the function of mixing those signals of different origins.

"Time division multiplexing," adds the professor, "is the name given to that technology because each of the signals is allocated a fraction of time in such a way that the various signals are intertwined cyclically in time, allowing all the channels to be transmitted and the receiving terminal to sort out the multiplexed signal, thus separating the original pulses into their proper channels."

Various studies in the area of communications by means digital systems are being made at UNICAMP by a group of 25 engineers financed by TELEBRAS, of whom Professor Arantes is the substitute coordinator.

"We began our activities in 1973 when an agreement was made with TELEBRAS," says the professor. "Thanks to its great support and its policy which leaned toward research in the communications area--it created the CPqD in Campinas, which is working together with that group in some of the research--we are becoming independent from the technological point of view in that area."

The Team Has Had Success

"If all the state universities were to sign new and more lasting agreements for research, we would certainly win our technological independence," says Professor Arantes, who despite the fact that he heads one of the largest departments of UNICAMP, works in a room in which all the furniture is on loan from TELEBRAS.

"The state government truly does not support its universities," mourns the researcher.

Through the agreement, the team, which at the beginning of the work was coordinated by Professor Rege Scarabucci, has had some successes.

In 1976, it concluded the preparation of a laboratory prototype of an MCP (Pulse Code Modulation) system with 30 voice channels. In that system, 30 different channels are coded in binary form and transmitted on a single wire at the rate of two million "bits" per second ("bits" is the abbreviation for "binary digits," which are the pulses transmitted in the fractions of time allocated to each channel)..

The conversion of that laboratory prototype into an industrial prototype was concluded in a joint work with the CPqD TELEBRAS team and national industry in 1978. Next year that prototype should be available commercially, according to Professor Dalton Soares Arantes.

In that same year, the group, under the coordination of Professor Arantes, produced a laboratory prototype for multiplexing 120 telephone channels at the rate of eight million bits per second. The work is now being subjected to field tests in Curitiba.

Next, a laboratory prototype was developed together with the CPqD for the digital transmission of 480 telephone channels at 34 million bits per second via radio.

That form of transmission, also in the test phase, is very efficient when there are great distances between terminals, says Professor Arantes.

Another project being tested, and which was prepared jointly with the CPqD under the coordination of Professor Arantes at UNICAMP, is that of a laboratory prototype for the digital transmission of 480 telephone channels by means of optic fibers.

"Those fibers, which are made from quartz crystals, in addition to being immune to noise are more efficient, lighter (just one millimeter thick, scores of them can be placed in one cable) and cheaper, since we have a large part of the world's quartz production," says the research coordinator.

"Our crystal," he says, "has been exported to Europe and the United States, who prepare it with a view to its applications in the area of communications. Once processed, the product is imported by the country in which it originates."

The UNICAMP Physics Institute participated in the optic fiber project, developing lasers used for modulating the signal in the optic fiber, adds Professor Arantes.

In addition to the initiation and conclusion of many projects, the agreement with TELEBRAS has facilitated the training of skilled personnel in the area of communications. In that area alone, 33 masters and 3 doctorate thesis have been written since 1973.

During the next three years, the team expects to work on the research and development of an MCP prototype for 60 telephone channels at two million bits per second to double the capacity of the communications network; research and construction of a prototype for the digital coding of color pictures for transmitting television signals, and give support and advice to the CPqD in the industrialization of projects such as optic fiber and digital radio communications, among others.

According to Professor Dalton Arantes, Brazil is keeping up with developed countries in the field of communications, being the "only country in Latin America which is carrying out an ambitious process of digital communications."

8908
CSO: 5500

BRIEFS

TELECOMMUNICATIONS FUNDING ASSURED--Sao Paulo (O GLOBO)--The assurance given by Minister of Planning Delfim Netto that the telecommunications industry will have 80 percent of the money from the National Telecommunications Fund (FNT) in 1981, opened new horizons for the sector in the coming year. In addition to the release of those funds, estimated at around 24 billion cruzeiros, the readjustment of rates to truly realistic levels is important, in the opinion of the director of the Ericsson Corporation, Jose Olavo Diniz, and the assistant director of the corporation, Miguel Ignatios. The annual luncheon of the sector held at the National Club was attended only by the vice president of the republic, Aureliano Chaves because Ministers Said Farhat, Camilo Penna and Haroldo Correa de Matos had to return hurriedly to Brasilia because of the imminent announcement that the winning companies in the drawing by the Ministry of Communications for the exploitation of two television channels were going to be revealed. During the meeting, in which the president of TELEBAHIA, Sebastiao Alfa, was elected administrator of the year and the president of the Central Brazil Telephone Company (CTBC), Alexandrino Garcia, received a special honor for his pioneer work in the sector in the central region, many criticisms were made of the government policy in the area of telecommunications. Some businessmen said that cuts in expenditures in the sector reached 100 billion cruzeiros at 1980 prices and that in the past administration, SEPLAN [Planning Secretariat] cut 50 percent of the FNT resources to which the industry had the right for new projects. [Text] [Rio de Janeiro O GLOBO in Portuguese 12 Dec 80 p 23] 8908

CSO: 5500

BRIEFS

MOROCCO, IRAQ DIRECT TELEGRAPH LINE--A telegraphic line has been opened between MAP and INA. The two-way line will be operational for 24 hours and will enable the two agencies to exchange national and international reports, in accordance with an agreement concluded in 1978, in Arabic. Each agency will transmit the reports of the other over its internal and external network. [Excerpt] [LD051221 Rabat Domestic Service in Arabic 1300 GMT 2 Jan 81]

CSO: 5500

BRIEFS

AGREEMENT FOR 60,000 LINES--In connection with the signing of a contract for the acquisition of 60,000 new electronic telephone lines, Mr Sadok Ben Jomaa and Mr Brahim Khouaja, minister of transport and communications and secretary of state for PTT [Posts, Telephones and Telegraphs] respectively, received two French delegations, one representing the French Secretariat of PTT, the other representing the CGE [General Electrical Company]. The working session dealt particularly with the introduction and impact of this new market, the possibilities of creating a new telecommunications industry in Tunisia, three-way cooperation, training in the specialized field of electronics, and the installation of a third underwater cable between Tunisia and France around the end of 1980. The 60,000 new telephone lines will provide increased service to the areas of Sousse, Sfax and Gabes. The first exchanges will be put in service in 1982. [Text] [Tunis LA PRESSE DE TUNISIE in French 4 Dec 80 p 5] 9238

CSO: 5500

ORTS SETTING UP EMERGENCY PLAN TO OVERCOME PROBLEMS

Dakar LE SOLEIL in French 20 Nov 80 p 3

[Article by Abdallah Faye: "Emergency Plan to Start up in December"]

[Text] Is the ordeal of the technicians and journalists of the Senegalese Office of Television Broadcasting (ORTS) drawing to a close? One is entitled to hope so, with the approaching gradual putting in place of the ORTS emergency plan, the first components of which (basically audio-visual equipment) will arrive next month.

The emergency plan, the information minister explained to us, is calculated at some 847,000,000. It is being financed by the Central Fund for Economic Cooperation [CCCE] (550,000,000), the Aid and Cooperation Fund [FAC] (237,000,000), with a contribution from the Senegalese government amounting to 60,000,000 CFA francs. Its chief objective is to recondition the 200-kilowatt medium-wave aerial transmitters and the 100-kilowatt short-wave aerial transmitters. Also provided for is the reconditioning of six radio studios, four in Dakar, one in Ziguinchor and another in Tambacounda.

In television, the only studio is to be completely done over with improved audio-visual equipment and installation of perfect lighting.

This does not mean that the small screen will cease operating once the work is finished. With the arrival in December of a new van for outside color broadcasting, the difficulty will be surmounted. The van is to serve as a studio (it is large enough) at the same time that it will provide broadcasting, when the improvement work is completed.

Once the studio is like new again, the van will carry on its proper work, which is outside broadcasting. And it will even be able to film productions in natural settings, recorded or live, thanks to the radio waves that are going to be directly connected with the central television studio.

The opening of a second studio, which was announced by the information minister when the budget was voted on in the National Assembly, will not happen tomorrow. In fact, Daouda Sow believes it is in danger of being too expensive, because some 200 million francs are required simply to renovate and equip the old one.

A Studio at the Sorano

Meanwhile, provisions have been made to use the stage of the Daniel Sorano National Theater as a production studio, with the aid of the van.

In addition to these equipment supplies, the emergency plan includes a training and technical assistance section, to train the staff in the new techniques of handling color equipment. The television staff are already taking courses at the ORTS Center for Professional Training, in the use and maintenance of the new equipment.

The transactions have been approved and notice given of the supplies since 14 November; which explains why the van and the replacement parts will be received next month. Installation of all the components of the emergency plan is scheduled for September 1981. The project is to be accomplished in stages, following a precise schedule drawn up by the information minister.

However, the emergency plan is not settling all the problems raised at ORTS, according to the information minister. First, there are the radio station transmitters, which have been operating since independence and have run out of wind. There is also a space problem, especially apparent in television, not to mention the troubles that constantly plague the regional stations, some of which have been silent for a while.

But the major problem that worries the information minister is radio coverage of the national territory. The government will devote itself to this with all its means, he indicated. And if it is not successful in providing the coverage through the emergency plan, it will seek other means to do so.

8946
CSO: 5500

BRIEFS

TELECOMMUNICATIONS IMPROVEMENTS--The Tanzania Posts and Telecommunications Corporation is undertaking four projects aimed at facilitating telecommunications services within and outside the country. The corporation's acting director general, Dr Kasambala, said in Dar Es Salaam today that the projects included expansion and installation of telephone stations in various upcountry centers. Other projects will involve the construction of monitoring stations at Kunduchi in Dar Es Salaam for frequency allocation and monitoring and the finalization of microwave links for the Mwenge earth satellite station. Ndugu Kasambala added that the corporation will also construct telephone houses at Zanzibar, Chake Chake, Wete, Tabora, Kigoma, Mbeya and at post house in Dar Es Salaam. [Text] [Dar Es Salaam in English to East Africa 1600 GMT 30 Dec 80]

CSO: 5500

BRIEFS

TV STATION COMMISSIONED--Alma-Ata farmers and livestock raisers in the villages and auls of Uralskaya Oblast [Priuralye] saw the new year's "Blue Light" [presumably name of television program]. A television station has been commissioned in Furmanovo, thereby ensuring the stable reception of central television programs. With its commissioning the 5-year program for the development of television broadcasting in Kazakhstan has been completed. In the next 5-year period the new "Moskva" space communication system operating in Alma-Ata and its oblast will cover many regions of the republic. [Text] [LD051627 Moscow SOVETSKAYA KULTURA in Russian 1 Jan 81 p 1]

RADIO TRANSMITTER IN ALTAYSKIY KRAY--The number of television viewers in Altayskiy Kray increased on new year's night. Television sets receiving programs from space television retransmitters came to life in Ozernyy, Charysh and other remote villages in the kray. The most powerful radio relay station has gone into service near the village of Ust-Kalmanka. Preparations have now been completed for the second all-union program of central television to be received in Altayskiy Kray. As is known, the introduction of this program was envisaged in CPSU plans to take place by the time of the 26th party congress. In an interview with a TASS correspondent, Yushkyavichyus, deputy chairman of the USSR State Committee for Television and Radio Broadcasting, noted that it would have been impossible to solve this task without the new television and radio center which was built for the 1980 olympic games. It has been used in post-olympic service since last October. Many technical facilities will be used to broadcast the new program, including the "Moskva" and "Ekran" land stations. Early this year, 20 "Moskva" stations will be set up for broadcasting to areas in Tyumenskaya Oblast, Kazakhstan, Central Asia and Novaya Zemlya. This will enable two all-union programs to be received here at the same time. [Text] [LD022034 Moscow Domestic Service in Russian 0000 GMT 2 Jan 81]

'ORBITA' STATION COMMISSIONED--Yuzhno-Sakhalinsk--The 10th "Orbita" space communication station has been commissioned in Yuzhno-Sakhalinskaya Oblast. It is the last of the "Orbitas" intended to be constructed here. In a short space of time the stations have provided more than four-fifths of the population of Sakhalin and the Kurils with a television service. [Text] [LD051625 Moscow SELSKAYA ZHIZN in Russian 3 Jan 81 p 1]

CSO: 5500

BRIEFS

NEW EEC DATA BANK--On 18 September, the CISI [International Information Science Services Company], a French informatics services company, announced the conclusion of an agreement with the EEC to create the largest macroeconomics data band in Europe. This file, designated "Chronos Eurostat," will contain around 600,000 macroeconomic strings in a total of 23 different domains (agriculture, industrial production, fishing, developing countries, EEC imports and exports, etc...). In all, the information to be offered by this data bank will represent 1 billion printed characters, or, the equivalent of 400,000 typewritten pages. This macroeconomics data bank, to be formated by the European Statistics Office, will be disseminated by the CISI in France, Europe and North America. The file will become accessible starting in early 1981 via the EURONET and TRANSPAC informatics networks. The CISI is the second largest informatics services company in Europe and the seventh largest in the world. [Text] [Paris AFP SCIENCES in French 25 Sep 80 p 22] 9238

CSO: 5500

EXPERIMENTAL USE OF TELEMATICS FOR DAILY PRESS

Paris AFP SCIENCES in French 30 Oct 80 pp 17-18

[Text] Paris--The daily press associations have just formed a GIE [Economic Interest Group] to experiment with the possibilities of applying the "Teletel" system to the daily press.

One of the GIE's objectives, according to its administrator, Mr Pierre Jaume, will be to provide for the possible participation by the daily press in the Velizy experiment, which is due to start in March, involving 2,500 subscribers. Mr Jaume is president of the Inter-association Technical Research Committee formed by the SNPQR [National Association of the Regional Daily Press], the SPP [Parisian Press Association], the SQR [Regional Daily Newspapers Association], and the SQD [Departmental Daily Newspapers Association].

The journalists belonging to the GIE, which is based in Paris, will be asked to prepare and update daily a very concise news bulletin that can be disseminated over Teletel (a television screen linked by telephone to a central processing computer that "brokers" diverse practical, juridical, economic and other information).

Thus, according to Mr Jaume, the press will be prepared when the use of telematics becomes generalized. This telematics press project, however, will be subject to the outcome of the work of the Government and Press Telematics Commission set up by the government last July.

The Government and Press Telematics Commission consists of representatives of the ministries and government agencies concerned (Communication, PTT, Industry, DATAR [Delegation for Territorial Development and Regional Action]) and of the daily press associations. Its mission is to draw up a set of telematics specifications, terms and conditions, and, according to Mr Jaume, to set forth "who does what and who is responsible for what" as regards telematics and the press.

The GIE's experimental project has only just begun. For 1980, however, the investment in initial experiments will total 600,000 francs. A request for financial participation in the project by the DIELI [Directorate for Electronics and Informatics Industries] has been filed with the Ministry of Industry.

9399
CSO: 5500

UNCERTAIN FUTURE FOR NATION'S TELECOMMUNICATIONS INDUSTRY

Paris ELECTRONIQUE ACTUALITES in French 21 Nov 80 p 3

[Article by Marilisa Verti]

[Text] Milan. Telecommunications are going through difficult times. In addition to government problems, with portfolios being shuffled among ministers who cannot manage to define any precise programs, there is absolute uncertainty about the future. Before the summer, because of the lack of financing for the SIP [Italian Telephone Company], a cutback in orders for manufacturers of about 25 percent was expected, with harsh consequences for the job market: of 60,000 people affected, about 30,000 persons were expected to be partially idled, leading to a high number of layoffs. These forecasts did not materialize, thanks to the 400 billion for reinvestment in the STET [Telephone Finance Corporation] allocated by the IRI [Industrial Reconstruction Institute]. But at present, with lower rates being demanded by the users' defense committee and with 7.8 billion lira in debts run up by the SIP, the telecommunications industry is back in a situation in which everything must once again be questioned.

The various companies active in Italy: Italtel (formerly SIT-Siemens), Telettra, GTE, Face Standard (ITT group) and Fatme, which differ from each other, both in their historic development and in the technology they use, reacted quite differently to the almost total decline in SIP orders in the switching sector, which will be one of the fundamental points for the introduction of electronic technology.

Italtel holds about 50 percent of the market, but despite its size, it has in the past not been able to diversify its products and its market, and so it is almost completely dependent on SIP orders. Italtel's leading product is the very well known Proteo, designed about 10 years ago and now in the development phase. It is precisely because Italtel has not managed to really diversify its production (it is absent from the field of data transmission, for

example), that it has been most severely affected by the crisis in this sector. Today the company seems to have decided to change its policy, and a finance corporation is apparently to be established; this firm will be run by a number of firms specializing in various sectors: public switching, telematics, transmission, etc., so that it can become an effective presence in a variety of fields. Moreover, the draft agreements with Telettra on switching are likely to become firm accords. Telettra is the other Italian agency (it is part of the Fiat group), and it holds about 8 percent of the Italian national market. To date, Telettra has not been seriously hurt by the crisis for two reasons: mainly because it is not present in a major way in the public switching sector, and secondly, because its activity is essentially concentrated in foreign markets.

GTE, because of its small size and because of the great diversity of its products, should be able to hold its losses caused by this crisis within acceptable limits. The share of this U.S. firm in the Italian market must be nearly 12 percent and so far its investment rate of recent years has been maintained. We can assume that the situation will remain stationary because GTE is not involved in the network installation sector. Another U.S. firm involved in Italy is the ITT group (20 percent of the market), whose main company is Face Standard. Despite its high profits, the company is not planning to reinvest in Italy in production and research, but it has decided to wait, in an attempt to optimize the volume of production by means of sub-contracting.

The Swedish group Ericsson is represented in Italy by Fatme, which is in debt and which is putting on pressure to have its actions taken to support employment in the south credited. This company has about 10 percent of the market and is involved in transmission and switching, but it has also been hit by what is happening in this sector.

This is only a reflection of what is going on throughout Italy. Depending on their ability to diversify and the importance of their exports, some companies have managed to survive in this chaos. The crisis should not be attributed to the actions taken by the agencies involved, but rather to the management system used in Italy.

Despite these ups and downs, however, it does seem that the present situation should improve. Recent statements made by the posts and telecommunications ministry have actually announced for 1980 an SIP investment of 2,250 billion lira, a guarantee of intervention in data transmission in coming years, the development of the information processing system for 1983, and specific developments in package switching (for the latter, forecasts call for 100,000 users in 5 years).

1981 will also see the start of some teletext and viewdata tests (based on the English Prestel model), which should become operational in a few years.

In the field of electronic switching, the strong point now is the Proteo system which is produced by Italtel. Some technological innovations are now being made in this system so that it can be marketed internationally. Pressure is being applied from all sides for the Italian government to select one national switching system. It is hoped that a unified system will be chosen, to permit maximum growth in this sector. Other programs are designed to reach accords between the various companies operating in the Italian market. These changes are essential, given the aspect of this sector in Italy, and these changes were included in the Final Electronics Plan. In summary, the proposals concerning telecommunications are based:

a. On the need to reduce the number of existing technologies by means of specifications which will enhance the value of Italy's production;

b. On the fact of favoring a policy of agreements between different agencies, not only national, but also with multinationals, in order to increase Italy's export potential;

c. On the planned introduction of electronic switching, skipping over the electromechanical phase;

d. On the construction of a national information processing network and the introduction of new services which can be integrated in traditional telecommunications facilities;

e. And on methods of financing research and restructuring plans that are consistent with the preceding points.

These are the government's guidelines. It is clear that a commitment in this direction would help to alleviate some of the problems that are affecting the telecommunications sector in Italy.

7679
CSO: 5500

NEW OPTICAL FIBER CABLE

Oslo NORGES HANDELS OG SJOFARTSIDENDE in Norwegian 12 Oct 80 p 12]

[Text] The requirements of power and telecommunication transmissions are usually met by the use of two different types of cables, and these ordinarily cannot be laid on the same run. Because the costs of laying cable are especially high for submarine transmitting, it would therefore be desirable to put two cables having approximately the same end points into one installation. With the development of optical fiber cables, which are not affected by the tension field surrounding a power cable, it has become technically feasible to put the combined cable types into use. Standard Telefon og Kabelfabrik A/S (STK), whose competence stretches from the largest submarine cables to transmission by hair-thin fibers, has now begun the construction of such cable. It is a matter of a 24 kV submarine cable insulated by cross-bound polyethylene, with an optical fiber cable laid inside it. The fiber cable, which will cover the telecommunication needs in the combined cable, simultaneously functions as a filler element in the power cable. Outwardly, the cable is the ordinary submarine cable, with sheathing of whatever dimensions are needed.

CSO: 5500

BRIEFS

TELEPHONE NET TO EXPAND--"In the course of the next 10 years we will double in size the telephone network which has taken 125 years to develop. In order to be able to accomplish this expansion and to offer a choice of modern services, investments of 25 billion kr are required during the same period," said Director General Kjell Holler of the Telegraph Administration in a speech to the Polytechnical Society in Oslo on Thursday. Holler stated that in order to carry out the future tasks the Telegraph Administration must during these 10 years recruit 11,250 new workers--1,050 to meet the increased demand for staff and 10,200 to compensate the natural attrition of workers and staff during this period. "The growth that we are planning for here implies that every single inhabitant of our country will have a telephone by the end of this period. One must believe that this necessarily will relieve the telephone queues," said Holler. At the end of 1979, 94,000 were waiting to acquire a telephone--6,600 more than the year before. "In 1980 we are counting on making 77,000 telephone installations. But this unfortunately is not enough. While in the '60's we filled on the average all of 4,000 subscriptions per year above the demand, the ratio was reversed in the '70's. In the latter half of the '70's we had an explosive increase in the demand for telephones, and this resulted in an inevitable sharp rise in the waiting lists," stated Holler. [Text] [Oslo ARBEIDERBLADET in Norwegian 15 Oct 80 p 7] 9655

CSO: 5500

END

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19 August 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 176

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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19 August 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 176

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BRIEFS

'MONTSAME,' 'KPS' SIGN AGREEMENT--Ulaanbaatar, 21 Jul (MONTSAME)--An agreement on mutual cooperation between the Mongolian Information Agency MONTSAME and the Lao KHAOSAN PATHET LAO AGENCY was signed a few days ago in Vientiane. [Text] [OW030042 Ulaanbaatar MONTSAME in Russian 1445 GMT 31 Jul 81]

AFGHANISTAN, GDR TV AGREEMENT--A cooperation agreement between DRA Television and the State Television Committee in the GDR Council of Ministers was signed this morning in the DRA Ministry of Information and Culture. The agreement was signed from the DRA side by the director of broadcasting of DRA Television; and from the GDR side, the ambassador of that country in Kabul, Kraft Bumbel. Under the contract cooperation will be undertaken on television programs and technical personnel and experts will be exchanged between the two countries for a period of 2 years. [Text] [LD290110 Kabul Domestic Service in Pashto 1230 GMT 28 Jul 81 LD]

CYPRUS, USSR RADIO, TV AGREEMENT--Today President Kiprianou received a delegation from the Soviet State Radio and Television which is in Cyprus for talks with CBC [Cyprus Broadcasting Corporation] officials. The talks have resulted in an agreement which provides for an exchange of radio and television programs. The agreement was initialed by the director of CBC, Mr Khristofidhis, and the leader of the Soviet delegation, Mr Yevstaf'yev, a deputy minister and vice chairman of the Soviet State Radio and Television Committees [as heard]. The agreement will be formally signed during the forthcoming visit of President Kiprianou to Moscow this autumn. [Text] [NC111700 Nicosia Domestic Television Service in English 1545 GMT 11 Aug 81]

CSO: 5500/2283

ASEAN TELECOMMUNICATION COOPERATION DISCUSSED

BK080903 Jakarta ANTARA in English 0805 GMT 8 Aug 81

[Text] Jakarta, 8 Aug (ANTARA)--The regional economic cooperation of the five-country ASEAN--Indonesia, Malaysia, Singapore, Thailand and the Philippines--will be strengthened with the proposed establishment of a regional telecommunication system.

The economic ministers of the 257 [million]-people region, at a meeting in Kuala Lumpur in 1977 stressed the importance of cooperation in telecommunications. They agreed to set up a regional telecommunication satellite and a submarine communication cable system.

At the fourth extraordinary meeting of countries using the service of International Satellite (Intelsat) in Manila early April in 1979 it was agreed that the second generation of the Indonesian Palapa telecommunication satellite will offer service to the five-member countries of ASEAN.

Indonesia plans to launch the second generation of Palapa in mid-1982, as the life span of the Palapa first generation will terminate by mid-1983.

The new satellite will have 24 transponders capable of reaching the 3,148,500 km region.

Late last May a memorandum was signed by the representatives of Indonesia and Singapore mentioning among other things that Palapa will be used to promote telecommunication links between the two countries and as a transmission medium for Singapore and other ASEAN countries in the event of other communication facilities are out of service.

With the signing of the memorandum all member countries have formally agreed to use the service of Palapa for telecommunication links and exchanges of television programs on ASEAN cultures before the 14th anniversary of the association which falls on August 8 (Saturday).

Palapa I with its 12 transponders has already served the five member countries. Their peoples have enjoyed ASEAN television program exchanged through the satellite.

With the Philippines, Indonesia made an agreement, similar to the one signed with Singapore, in Jakarta in June in 1978. The signing was on March 23 in 1979 with Thailand and with Malaysia it was on March 29 in 1979 all in Jakarta. [paragraph as received]

The agreements specify that 12 transponders of the 24-transponder Palapa II will be for use in Indonesia and 9 for the other four countries and the remaining 3 are for reserve.

All member countries of ASEAN will be linked with submarine cable systems. Establishment of the systems between Indonesia and Singapore was expected to be completed in 1980-81.

The systems constitute part of the ASEAN submarine cable networks linking the five member countries.

The links between Singapore and Malaysia, and Malaysia and Thailand were also scheduled to be completed in 1980-81, where as that between the Philippines and Thailand is scheduled for completion in 1982-83.

The submarine cable systems between the Philippines and Singapore were completed in September in 1978.

CSO: 5500/2283

DELHI-MOSCOW TROPOSCATTER LINK TO OPEN DOOR

Madras THE HINDU in English 15 Jul 81 p 7

[Text]

NEW DELHI, July 14

A direct troposcatter link between Delhi and Moscow is expected to be operational by early September this year. Installation of the equipment at the Indian terminal is almost complete and preliminary testing has commenced.

The existing telecommunication services between India and the Soviet Union are provided by using a high frequency radio link between Delhi and Moscow, supplemented by hardpatched satellite circuits via London and Paris.

Recently, a direct satellite link was opened between Delhi and Moscow. Due to the technical and traffic limitations of these channels, a direct troposcatter link between the two countries was mooted in 1977. A protocol for providing a direct troposcatter communication link between Charar-e-Sharif near Srinagar and Dushanbe in Tashkent (USSR) was signed in May, 1977.

A troposcatter system works on the principle of refraction of the radio waves at the mountain tops. In this system, the radio waves will be directed towards mountain peaks of the Himalayas separating India from the USSR, which will act as knife-edges to bend a small portion of the resultant energy in the direction of the receiving terminal. Though short tropo links have been successfully tried, the Indo-USSR link will be one of the longest hops using this technology.

It was envisaged in this project that the radio equipment for both the terminals will be supplied by the USSR, while the maintenance system would be supplied by India. The system would be initially provided for upto 12 voice grade channels and will be capable of expansion to 24 channels with increase of transmitter power.

The channels derived from this link will be connected to the New Delhi international switching centre Via the national microwave link between Srinagar and New Delhi. Similar extensions would be done on the USSR side as well.

The estimated cost of the project for the Indian terminal which is located at Charar-e-Sharif, is Rs. 3.90 crores, with a foreign exchange component of Rs. 92 lakhs. The antennae systems at both the ends have been supplied by the Electronics Corporation of India (ECIL).

The systems engineering and installation at the Indian terminal is being handled by Indian engineers and assistance from USSR engineers is being availed of for installation and testing of the equipment. The ECIL engineers were associated with the commissioning of the antenna systems at Srinagar and Dushanbe.

The civil and associated works are in progress. The reward UHF link connecting Charar-e-Sharif terminal to Srinagar has been supplied by the Indian Telephone Industries and is expected to be tested shortly.—Our Special Correspondent.

CSO: 5500/7154

TASK FORCE ON RURAL TELECOMMUNICATIONS REPORTS

Bombay THE TIMES OF INDIA in English 8 Jul 81 p 6

[Text] NEW DELHI, July 7 (UNI):

A CHANGE in the present policy of providing telecommunication facilities in the rural areas, strictly on the basis of population, has been recommended by the task force of the Post and Telegraph department.

A majority of villages in several states will miss the facility if population of villages is the sole criterion, according to the report of the task force submitted to the government recently. The task force was entrusted with the task of evolving a new strategy for the development of rural communication.

A long-distance public telephone is at present opened, without consideration of its remunerativeness, in a village with a population of 5,000 or more in developed areas, and 2,000 or more in backward, hilly or tribal areas.

In states like Himachal Pradesh, Madhya Pradesh, Orissa, Jammu and Kashmir, Assam, Rajasthan and Uttar Pradesh, the report points out, there are not more than six per cent villages whose population exceeds 2,000. States like Bihar, Punjab and Karnataka have about eight per cent of this villages in this category.

UNEQUAL SHARE

Even in advanced states like Maharashtra, West Bengal and Gujarat, only ten per cent of the villages have more than 2,000 inhabitants while the number of such villages ranges from 20 per cent in Andhra Pradesh to 30 per cent in Tamil Nadu. Kerala is the only state where 98 per cent of the villages have more than 2,000 residents.

Therefore, the report says, the present policy is likely to result in maldistribution. The share of more than half of the states, particularly HP, J and K, Orissa, MP, Assam, Rajasthan and UP would be very low.

It would be more rational, the report says, to adopt population and distance-related criteria, than merely population, to meet the plan objective of providing access to a public telephone facility to an inhabitation within a reasonable distance.

The task force has recommended that the country should be divided into clusters of villages of five-km radius and public telephones provided on this spatial basis.

If this is adopted as the new policy, only about 47,000 public telephones will be needed to provide communication facilities within a five-km distance. Accessibility of a telephone within this distance should be attempted first and later on reduced progressively to four km. or less, depending on the demand.

As regards the charge for the rural telephone service, the task force is not in favour of adopting a differential tariff scheme as introduced by a neighbouring country. Under this scheme, the rental and trunk call rates are determined by the economic conditions of the region. An agricultural subscriber is charged less than an industrial or business subscriber.

Such a policy cannot be implemented in India as the means of production in rural areas are predominantly private-owned. Any classification on the basis of occupation or profession is likely to run into problems.

Therefore, the national trunk charging plan should be uniformly followed for the whole country, making no distinction on the basis of class of subscriber. Whatever subsidy may be required to encourage telephone usage in economically backward and underprivileged regions may be allowed in the fixed annual rental charge.

CSO: 5500/7150

BRIEFS

APPLE SATELLITE COMMUNICATION--The communication channel aboard Apple has been successfully used by the space application center in Ahmedabad for relaying a radio program of All India Radio to the New Delhi earth station where it was recorded. A mission control spokesman at Sriharikota said the channel was used for a period of 1 hour and 50 minutes and the program reception was good and the recording went off smoothly. [Text] [BK310257 Delhi Domestic Service in English 1530 GMT 29 Jul 81 BK]

PLANS TO LAUNCH SATELLITES--The Indian Space Research Organization [ISRO] is planning to launch satellites like Bhaskar with payloads weighing between 600 to 700 into sun's synchronous orbit by 1985-86. This was stated by ISRO director Pro U. R. Rao in an interview with United News of India in Bombay. He said the ISRO is also planning to upgrade SLV-III launch vehicle for achieving a capability to launch 150 kg payloads. It will also develop a totally new vehicle in 2 or 3 years. He said the country will be able to launch its own communication satellites in a few years. [Text] [BK290915 Delhi Domestic Service in English 0830 GMT 29 Jul 81]

'APPLE' ATTITUDE SYSTEM--Advanced attitude control systems used in APPLE offer several advantages for better satellite communication facility, reports UNI. According to experts in Delhi, the three-axis body stabilization system developed recently allows complex antennas for better pointing accuracy towards the earth. Larger solar arrays can be oriented towards the sun. Higher frequencies can be used and the satellite's capacity can be better utilised. The beams can become more directional and they would permit closer satellite spacing. Far from being passive repeaters of microwaves in the sky, satellites can become switch boards in orbit which can provide better links to terminals on land as well as on board ships. The latest Intelsat-5 satellite over the Atlantic Ocean has the new attitude control system, which is a sophisticated method of stabilising the spacecraft. It needs momentum wheels. Such wheels have been perfected in India. [Text] [New Delhi PATRIOT in English 9 Jul 81 p 5]

CSO: 5500/7151

BRIEFS

ACCESS TO AIRBORNE SCANNER--Technology that allows scientists to "spy out" fish shoals, crop and forest diseases, and storm and fire damage from heights ranging between six and 900 kilometres will be highlighted at a ceremony tomorrow. Involved are the Minister of Science and Technology, Dr Shearer, and IBM (New Zealand) limited, who will a document clearing the way a second joint agreement between IBM and four government departments for research into data gathered by airborne scanners on New Zealand's land and sea resources. [as published] Under the agreement the Department of Scientific and Industrial Research, the Ministry of Agriculture and Fisheries, the Forest Service, and the Lands and Survey Department will have access to a Sydney-based computer system called Erman. This will analyse the information collected as the result of airborne sweeps at six kilometres over selected areas of the country using a sophisticated American scanner or remote sensor. [Text] [Wellington THE EVENING POST in English 8 Jul 81 p 40]

CSO: 5500/9016

CAUSES FOR FREQUENT BREAKDOWN IN TELECOMMUNICATIONS CITED

Sofia IMPULS in Bulgarian 16 Jun 81 p 3

[Text] Almost daily, the bulletins about the conditions of the telecommunications system cite facts of breakdowns of the intercity and intracity telephone and telegraph communications caused by power outages.

Other causes cited are out of order generators, out of order automatic system of generators, shortage of fuel for the generator, absence of a technician to switch it on, even, absence of a generator and many other "valid" causes which are not being fought against persistently.

We work to the new economic mechanism, improve the work brigades' organization, every year we put a number of new projects into exemplary condition and improve our training, and still breakdowns in power equipment are considered as an "irresistible force" behind which organizational weaknesses, negligence in supply, oversight in planning, etc. hide.

Power outages and breakdowns of the regular and back-up power providing equipments have occurred in the past, occur now, and will occur in the future. However, there should be a trend to decrease them in number as well as in duration, despite the constant growth in the quantity of such equipments. On the other hand, the decrease will remain wishful thinking and there will be no change in the situation as long as the personnel immediately exploiting and maintaining the power equipment and installations and the chiefs of the okrugs' telecommunication managements do not pay the necessary attention and care to the problem, because most of the breakdowns, for example in Stara Zagora, are the result of indifference. And breakdowns caused by power outages occur in many okrugs. In recent years, leading okrugs by this negative index were Sofia, Pleven, Mikhailovgrad and Pernik, but recently they have been closely followed by Burgas, Shumen and Yambol, and, finally, for several months now Stara Zagora has been the champion.

A careful analysis of the actual causes reveals curious facts:

a) Irregular deliveries of liquid fuels and oils to district and subdistrict stations;

b) Irregular control of power equipment conditions in some places;

c) Occasional inadequacy of liquid fuel tanks which do not meet the requirements;

d) Despite repeated instructions requiring creation of okrug service stations for telephone and telegraph power supply and organization of annual refresher courses for the local personnel, most of the okrugs have not completely fulfilled these instructions;

e) The order and delivery of spare parts on time is not secured;

f) The OUS [Okrug Management of Communications] do not keep track of their orders in PSO [Industrial Supply Organization] "MTS" [Machine-Tractor Station] and they do not know what part of their orders has been accepted, when they could expect the delivery and what should be reordered;

g) The installation rooms for the expected power equipment are not prepared;

h) The cooperation of the local power authorities is not sought. Neither is the assistance of higher local organs (city and okrug BCP committees) for the improvement of the quality of power supply to ptt (posts, telegraphs, telephones) in a given city or ptt stations in the district;

i) The power supply work groups in some okrugs are not given priority use of vehicles for prophylactic check-ups of the equipment;

j) OUS [Okrug Management of Communications] does not keep a record of the time spent for repairs and the quality of the repair jobs. They do not take into consideration the contribution made by the people working in the power supply for the fulfillment of the plan and for reaching high-quality indices;

k) Very rarely does the management of OUS [Okrug Management of Communications] familiarize itself on the spot with the circumstances under which a breakdown has occurred, with the work conditions in the power supply, with the needs of the personnel etc;

l) At some places not enough attention is paid to keeping and preserving the plans and instructions for power equipments and installations, neither are all changes reflected in them;

m) Precautionary checkups and technical inspections of diesel generators are not scheduled and carried out on time;

n) The condition of the grounding installation is not checked even once a year;

o) The conditions of the batteries are not regularly inspected, and the supply and installation of new batteries is not done on time.

There are many more weaknesses.

There is one problem in power supply which is not directly related to the breakdowns, but strongly affects personnel fluidity. It is the attitude towards the nature and conditions of the job. Looked at from a distance, power supply is a

simple matter: a rectifier, battery, diesel generator and control panel. That is why people view and care for power supply as if it were something very simple. The personnel is exclusively male, which is something very rare for the communications field. The job of maintenance of equipment and installation is one of the least attractive. It involves acid fumes, gas, fuel, oil, humidity, dust, noise, vibrations, artificial light, high temperature, draughts, hauling of heavy objects, soiling of body and clothing, it requires frequent trips to all stations in the okrug which have ATTs [dial telephone exchanges] and duties after regular working hours and during weekends. For continuous work under the influence of any of the above-mentioned harmful substances extraremuneration and compensations are given. However, in power supply jobs neither extraremuneration, nor any other compensation, like a shorter working day or extra paid leave, is stipulated, despite the fact that work in consecutive harmful conditions amounts to work in a complex of harmful conditions. Probably that is why not a single woman has chosen power supply as a profession.

It is a well-known fact that tt power-supply plants in this country are equipped with rectifiers made in Bulgaria, the USSR, GDR, FRG, France, Italy and Norway and are built to different designs and have a high use of electronics--a total of 50 kinds; batteries produced in the same countries, including stationary, power and starter batteries--a total of over 60 kinds; gas and diesel generators made in Bulgaria, the USSR, GDR, CSSR and Poland equipped with complex automatic and other auxiliary devices--a total of 30 different kinds; converters, motor generators, invertors and other electrical converting devices, or a total of 160 different kinds of equipment made in 40 factories in 9 countries. The maintenance of this equipment requires a solid base of knowledge and high-level training.

Because of the frequent power outages, the stand-by power equipment, batteries and diesel generators are activated very often. This leads to a great increase in the number of switches from regular to stand-by equipment and vice versa, which in its way leads to more frequent breakdowns of the equipment. The volume, complexity and responsibility of the personnel's work has increased many times. Now a power outage, even in a small station like Belchia Banya, Kaspichan, etc. disorganizes the operation of a considerable part of the communication system. This is another fact which underscores the importance of these problems. There is not an okrug in the country with fewer than 20 village ATTs [dial telephone exchanges], and in okrugs like Plovdiv and Veliko Turnovo there are at least 70-80. Some leaders, as in Vidin, Pernik and others, believe that one man can maintain the power plants, others, as in Mikhailovgrad, believe that there is not enough work in power supply and that there should be cuts in the personnel. Nearly half of the OUC [Okrug Management of Communication] have not provided service vehicles to their tt power teams. It is not surprising then that in these okrugs there are numerous and lengthy breakdowns. And why are breakdowns caused by personal faults not penalized by the managers?

The conclusion is that what is being done now in the okrugs to forestall and diminish the power outages is insufficient. OUC [Okrug Management of Communication] managers and the public organizations, which are responsible too, should visit the tt power team, participate in the discussions and in the solving of the existing problems. At least once a year they should join the team inspecting the plants in the okrug. This practice will help them to know the problems and to solve them in a timely and effective manner.

The assistant technical managers should, at least once a year, visit some of the neighboring okrugs and get acquainted on the spot with the power-supply organization. This will give them the opportunity to exchange experience and to achieve an overall improvement in the work.

The number and duration of the power outages are a specific mirror for the telecommunication conditions in the okrug. Let us work in such a way that only good things are reflected in it.

9804
CSO: 5500/3020

BRIEFS

BOLIVIA-ARGENTINA MICROWAVE LINK--La Paz, 14 Jul (TELAM)--According to the Bolivian National Telecommunications Enterprise (ENTEL), in December 1981 a microwave connection between Bolivia and Argentina will be instituted, completing a program by the state telecommunications agencies of the two countries. The work on infrastructures will be completed in August, so that microwave equipment can be installed by October and the connection will begin testing in November. This link will increase to 24 channels the microwave links between the two countries, 20 more than now exist, and also making possible direct dialing in Yacuiba on the Bolivian-Argentine frontier. Direct dialing between Bolivia and Argentina might also be made possible by this new system, but technical and commercial studies are still being made on that. [Buenos Aires TELAM in Spanish 2150 GMT 14 Jul 81]

CSO: 5500/2280

BRIEFS

FREQUENCY BAND ALLOCATION--Buenos Aires, 22 Jun (TELAM)--A basic scheme for the allocation of frequency bands for fixed and mobile land radio communication services not connected with the public telephone network has been approved by a resolution of the under secretary of communications. This measure constitutes part of an overall plan to reorder the various frequency bands with the object of controlling the expansion of each service, satisfying current demand and providing, insofar as possible, for their evolution in the immediate future. The first step in this plan was designed to offer better facilities to those enterprises engaged in public telephone services which use radio communications systems, such as: radio links of medium and low capacity, mobile land radio telephones, rural telephones, public telephone booths and rural subscribers. The second step will be to reorder privately used communications services in commercial enterprises and official organs. [Text] [PY010354 Buenos Aires TELAM in Spanish 2115 GMT 22 Jul 81]

BROADCASTING DIRECTOR--Buenos Aires, 25 Jun (TELAM)--Col (ret) Ricardo Manuel Subiela today became the new national broadcasting director. [Buenos Aires TELAM in Spanish 1435 GMT 25 Jun 81]

CSO: 5500/2280

BROADCASTING POLICY DISPUTE RILES TELECOMMUNICATIONS CHIEF

Hamilton THE ROYAL GAZETTE in English 8 Jul 81 pp 1, 3

[Excerpts] Telecommunications chief Mr John Young confirmed last night that he had resigned over Government's handling of broadcasting decisions. He revealed that he disagreed with a number of matters contained in the recent policy report by the Hon. John Swan, Minister of Home Affairs.

Mr Young, the second member of the Government body to quit in unhappy circumstances within a month, further stated that he was in favour of broadcasting licences being granted to Cablevision and Starvision.

This is an opinion shared by at least one other member of the Telecommunications Authority.

Mr John Fuge backed Mr Young on this point and Mr Charles Kempe is believed to have resigned last month for similar reasons.

Mr Young confirmed a number of points, disclosed by Cablevision head Mr Gavin Wilson, which show discontent with Mr Swan's actions.

They are that the Minister:

--Was not advised to adopt the broadcasting policy by the Telecommunications authority.

--Was not supported by the authority in his policy.

--Did not seek the authority's views.

--Did not bring to the authority's attention a study commissioned by ZFB and ZBM which he adopted in part.

--"I am unhappy with the way things have been going," Mr Young admitted.

"The Telecommunications Authority was not consulted about the policy. We agree with some points in it, but not others."

Mr Young said he was not in favour of the market being thrown wide open, but felt that licences should be given to the two companies as well as ZFB and ZBM.

"This is a country of free enterprise," he continued.

"I do not mean open it up wide and give everyone licences. Controls should be exercised on such matters as programming. Licences should be granted to the four companies and no others. That would be the end of it and people should be warned of that."

Mr Young said the Minister had given the go-ahead for receiving satellite transmissions without proper restrictions and controls being imposed.

CSO: 5500/7542

BRIEFS

SATELLITE USE APPROVAL--ZBM did not break the law when they used their own satellite dish to broadcast live coverage of the attempt on President Reagan's life, the Minister of Home Affairs said yesterday. And with no amendments to the Telecommunications Act planned, that means that ZBM will be free to use the dish to pick up and broadcast satellite signals in the future. The Hon. John Swan said that after consultations with the Attorney General's chamber,he had been advised that the use of satellite dishes, or earth stations, did not breach existing legislation. Since ZBM already possessed a licence to transmit television signals, no legal obstacles stood in the way of their using their dish. "It should be pointed out, however, that when using material received by an earth station, the onus is clearly on the receiver to ensure that the appropriate copyright clearances have been arranged with the owners of the material," said Mr Swan. [Excerpt] [Hamilton THE ROYAL GAZETTE in English 4 Jul 81 p 1]

CSO: 5500/7542

BRIEFS

DPA OFFICE IN LA PAZ--The DPA offices in La Paz were officially inaugurated yesterday. The DPA director for Peru was present and explained DPA's operations to newsmen. In the Andean region DPA relies on satellite links from the FRG to all the capitals in the region. In La Paz it will have equipment for a line via satellite from Hamburg to La Paz, which will permit a message to be relayed in less than a minute. Ana Marie de Campero will be the DPA correspondent in Bolivia. [La Paz EL DIARIO in Spanish 18 Jun 81 p 3]

CHURCH RADIO--Tarija, 22 Jun (PRESENCIA)--Loyala Cultural Action [Accion Cultural Loyala--ACLO] has installed a modern broadcasting station in Tarija, called Radio Tarija. It is to serve the public, especially the peasants. [La Paz PRESENCIA in Spanish 23 Jul 81 p 2]

CSO: 5500/2280

BRIEFS

NEW TV STATION--President Figueiredo today presided over the dedication of a modern television station in Campos. On dedicating the new TV station--Channel 13 Norte Fluminense--in Campos, Rio de Janeiro State, President Figueiredo said that he is aware of the role which television plays as agent of our development. [PY202347 Brasilia Domestic Service in Portuguese 2200 GMT 16 Jul 81 PY]

CSO: 5500/2277

KUWAIT TO AID YAR IN TELECOMMUNICATIONS PROJECT

GF291205 Kuwait ARAB TIMES in English 29 Jul 81 p 5

[Text] Kuwait, 28 July (KUNA)--The Arab Fund for Economic and Social Development (AFESD) will provide a 1.4 million Kuwaiti dinar loan to North Yemen, a press release said.

The loan will be utilized in partial financing of the North Yemen portion in a joint telecommunication network.

The project is the third joint Arab scheme providing for a telecommunications link between Somalia, Djibouti, North Yemen, South Yemen and Saudi Arabia, the release added.

The agreement was signed by the fund's chairman and director general Dr Mohammad Al Amadi with North Yemen under secretary for transport Mohammed al Arshi.

The project is to close existing gaps in telecommunications between South Arabia and East Africa.

The 8.3 million dinar project will also provide a modern telecommunication facilities between the countries involved and lead to the improvement of telephone and telex services as well as relaying of television programs, the release added.

Meanwhile, the Arab Fund for Economic and Social Development (AFESD) is conducting a study on inter-Arab investments, a senior executive said today.

The study, in cooperation with the Pan-Arab Investment Guarantees Corporation and Kuwait Fund for Arab Economic Development will be expanded to include all Arab states after it was experimented in three parts of the region, Dr Ismail al Zabri said in a press interview.

In its earlier stage, the study was restricted on means of investment in Kuwait, Jordan and North Yemen.

Earlier in the year, representatives of the three agencies visited the countries involved for discussions with business institutions particularly in Kuwait, he said.

Results of the experiment were encouraging to the extent that the study will now be applied all over the Arab world.

The second and final phase of the study will be carried out in September but it would be difficult to forecast the final result, Dr al Zabri added.

The completed study on means of investment in 17 Arab countries will be presented to a meeting of the fund's governors scheduled to open next April.

In cooperation with the Arab League and the Arab Monetary Fund, AFESD is also engaged in preparation of the 1981 report on unified Arab economy, he said.

Meanwhile Abu Dhabi Fund for Arab Economic Development (ADFAED) will concentrate on financing development projects in Islamic states, according to new directives by Crown Prince and Deputy Commander-in-Chief Shaykh Khalifah ibn Zayid, an announcement in Abu Dhabi said today.

CSO: 5500/2278

BRIEFS

TV RELAY STATIONS OPERATIONAL--As a result of the efforts and steadfastness of the committed technical staff of the Voice and Vision of the Islamic Republic of Iran seven new television relay stations became operational during the month of Ramadan in various parts of the country. The locations are as follows: Apadarreh station in the Province of Zanjan, covering 8 villages; Lavasanat-e Bozorg station in the Central Province, covering 37 villages; Balaghan Va Ahar station in the Central Province, covering 5 villages; Chah Malek station in the suburbs of Na'in in Esfahan, covering 6 villages; Jandaq station in the suburbs of Na'in in Esfahan, covering 16 villages; Khor Va Biyabanak station in the suburbs of Na'in Esfahan, covering 9 villages; Nurabad station in the Province of Luristan, covering 384 villages. The second television network has begun functioning in Kuhpanah in Arak in the Central Province, covering the cities of Arak, Saveh, Tafresh, (Ashtiyan) and about 450 villages. [Text] [LD021344 Tehran Domestic Service in Persian 1030 GMT 2 Aug 81]

TELEVISION REPEATER STATION--The repair and maintenance unit of the Voice and Vision of the Islamic Republic of Iran, Shiraz, has reported that the Bavanat television repeater is operational and that Bavanat citizens can now watch television programs of the Voice and Vision of the Islamic Republic. The television repeater will be used for a 6-month trial period. [Text] [GF110636 Shiraz Domestic Service in Persian 1430 GMT 10 Aug 81 GF]

TELEVISION RELAY STATIONS--As a result of the efforts and steadfastness of the committed technical staff of the Voice and Vision of the Islamic Republic of Iran seven new television relay stations became operational during the month of Ramadan in various parts of the country. The locations are as follows: Apadarreh station in the province of Zanjan, covering 8 villages; Lavasanat-e Bozorg station in the Central Province, covering 37 villages; Balaghan Va Anar station in the Central Province, covering 5 villages; Chah Malek station in the suburbs of Na'in in Esfahan, covering 6 villages; Jandaq station in the suburbs of Na'in in Esfahan, covering 16 villages; Khor Va Biyabanak station in the suburbs of Na'in Esfahan covering 9 villages; Nurabad station in the province of Luristan, covering 384 villages. The second television network has begun functioning in Kuhpanah in Arak in the Central Province, covering the cities of Arak, Saveh, Tafresh, (Ashtiyan) and about 450 villages. [Text] [LD021344 Tehran Domestic Service in Persian 1030 GMT 2 Aug 81]

CSO: 5500/2278

BRIEFS

SATELLITE GROUND STATION--A contract has been signed in Baghdad between Iraq and the Soviet Union to build a ground station for satellite communications in Baghdad at a cost of one million Iraqi dinars. It was decided that the new station would be opened before the convening of the nonaligned conference to be held in Baghdad next year. This station will provide telephone links with a group of socialist and third world countries who presently utilize the services of the Soviet satellite "Sputnik". Among other services provided by the station will be the exchange of radio and television programs between Arab and socialist countries. Signing for Iraq was the president of the public telephone, telegraph, and post organization and signing for the Soviet firm, Braumish Export Organization, were a number of company officials. [Text] [London AL-DUSTUR in Arabic No 527, 20 Jul 81 p 38]

CSO: 5500/4724

BRIEFS

IRAQI-JORDANIAN MICROWAVE--Baghdad, 24 Jul (PETRA)--An unidentified Italian firm has won a contract from the Iraqi Ministry of Communications to implement the western Dijlah-Baghdad-Amman microwave project at a cost of $40 million. The project, to be completed in 31 months, should make available 1,260 microwave telephone channels between Amman and Baghdad, in addition to two functioning broadcast channels and one spare. The project entails the installation of microwave equipment and the construction of 17 stations in Iraq extending over 500 kilometers and eight more in Jordanian territory, over 300 kilometers. The project, when completed, will ensure better radio and television programme exchanges between Jordan and Iraq. [Text] [JN251013 Amman JORDAN TIMES in English 25 Jul 81 p 2]

CSO: 5500/4725

BRIEFS

'ANG'-'ANOP' COOPERATION AGREEMENT--A cooperation agreement was signed the day before yesterday between the ANG (GUINEA-BISSAU NEWS AGENCY) and the ANOP (PORTUGUESE NEWS AGENCY). The two agencies agreed to exchange information on their respective countries, to be used later at an international level. The two parties promised to proceed to periodic air mail exchanges of photos that reflect the realities of the two countries, with special importance given to Africa. The agreement also includes the exchange of news items, thus establishing a line of contact between Portugal and Guinea-Bissau, with the work to be carried out by ANOP. Moreover, ANOP agreed to receive ANG journalists for training in Portugal or its branches abroad. In turn, ANG will receive in Bissau ANOP journalists and technicians, who will hold conferences and direct training seminars or just make study visits. The present agreement, which is valid for the period 1981-1982, will be tacitly renewed every year unless one of the parties gives notice of its intention to withdraw at least 3 months in advance. ANG was by represented Antonio Oscar Barbose, while ANOP was represented by information director Jose Manual Barroso. [Bissau NO PINTCHA in Portuguese 20 Jun 81 p 2]

CSO: 4728/83

BRIEFS

JAPANESE SYSTEM IN IBADAN--Three Japanese companies have won a $71m. order to construct a microwave communications system in Ibadan, Marubeni Corporation has announced in Tokyo. Marubeni and the two other companies, Nippon Electric and Sumitomo Electric Industries, will supply equipment and undertake all installation work for the system to be completed in two years. The contract was from the Nigerian Communications Ministry. [Text] [London WEST AFRICA in English No 3337, 13 Jul 81 p 1601]

NIGER STATE BOOSTER STATIONS--Two new booster stations for the Niger State Broadcasting Corporation will start transmiting by early August this year. The two stations still under construction at Bida and Kontagora are worth N1 million. This was disclosed by the general manager of the corporation, Alhaji Ibrahim Ahmed when he and members of the board of directors visited the State Governor in Minna. [Text] [Lagos DAILY TIMES in English 11 Jul 81 p 23]

CSO: 5500/5055

BRIEFS

COORDINATION WITH ANGOLA--The Angolan and Zairian aeronautical experts, who met for 48 hours at Kinshasa, expressed, at the end of their work last Tuesday their common will to further improve the security of air traffic between Zaire and Angola. Citizen Maweto Konko Ntoya, chairman and delegate general of the Airlines Administration (AA) and chief of the Zairian delegation to these proceedings, indicated to the press that the discussions were basically centered on the problem of coordination in the aeronautical telecommunications field, with a view to a better exchange of messages between the two countries' airports. The AA chairman and delegate general, after having praised the initiative shown by the experts of the national Angolan air transport establishment (ENNA) in consulting with their Zairian colleagues, asked them to act as interpreters for the latter with the experts from the countries of central and southern Africa where they will go as part of their consultation mission. On Tuesday morning, the Angolan delegation, led by Jose Tonet, director general of the ENANA [expansion unknown] visited Ndjili international airport and left again for Lusaka and Maputo. [Text] [Lubumbashi LE QUOTIDIEN DU SHABA in French 6 May 81 p 6] 9434

CSO: 5500/5042

COMMUNICATIONS SATELLITE LAUNCHED

LD311520 Moscow TASS in English 1505 GMT 31 Jul 81

[Text] Moscow 31 Jul (TASS)--Under the programme of further development of communications systems and television broadcasting with the use of artificial earth satellites, the Soviet Union today launched the communications satellite "Raduga" with on-board relay equipment meant for ensuring continuous telephone and telegraph radio communication around the clock in the centimetre wave band and simultaneous broadcasting of colour and black-and-white programmes of central television to the network of the stations "Orbita."

The Sputnik "Raduga" was put into a circular orbit close to the stationary one at a distance of 36,690 kilometres from the earth's surface. The period of revolution around the earth is 24 hours 37 minutes. Inclination of the orbit is 0.4 degrees.

Besides the perfected multi-channel relay equipment for communication and television broadcasting, the satellite has the three axle system of precise orientation at the earth, the power supply system with independent guidance and orientation of solar batteries at the sun, the system of correction on the orbit, the thermoregulation system, the radio telemetric system for relaying to the earth the data about the work of on-board systems, the radio system for exact measurement of parameters of the orbit and guidance of the Sputnik.

The Sputnik "Raduga" has the international registration index "Stationar-2."

CSO: 5500/2278

TELECOMMUNICATIONS POLICY AWAITING CLARIFICATION

Paris ELECTRONIQUE ACTUALITES in French 12 Jun 81 pp 1,6

[Article by D Levy: "Profession Awaiting Clarification on Industrial and Telematics Policy"]

> [Text] In assuming his duties as minister of the PTT [Post-Telegraph-Telephone] Mr Mexandeau inherited from his prede his predecessor a series of files, some of which required immediate decisions and others which required clarifications, specifying the new government's intentions with respect to important questions, in particular industrial and telematics policies. Among the former, Mr Mexandeau will have to confirm measures concerning industrial studies on teletex and 100,000 EGT [General Telecommunications Enterprise] telecopiers, measures taken by the Administration before 10 May but which have not yet been made public as a courtesy to the new minister.

Basic changes in telecommunications are hardly expected in the next few weeks. The PTT, which again becomes a ministry and no longer a state secretariat, has acquired political dimension these past few years, particularly due to very large investments authorized for the development of telephone equipment (25 million francs in project authorizations per year), to completed industrial operations (Francization of the LMT [Telephone Material Company] and STE [Ericcson Telephone Company], the restructuring of the AOIP [Association of Precision Instrument Workers] and of Depaepe [Company]), as well as to initiatives taken in telematics.

The PTT and, more precisely, the General Directorate of Telecommunications have also implemented an industrial policy based on company competitiveness (broad-based studies, cost reduction, export priority, releasing of terminals).

Industrial Studies Under Way

Before considering industrial policy studies, Mr Mexandeau will approve decisions made by his staff before his arrival at [the Ministry of the PTT on] Segur Avenue. Among these ongoing operations the ones most anxiously awaited concern the awarding of teletex terminal development and 100,000 telecopiers for wide distribution to be marketed by EGT.

Terminal development focuses on perfecting low-cost teletex terminals adapted to the new teletex services beginning to appear in Europe (Germany, then Sweden in the fall). This recently standardized service at CCITT [International Telegraph and Telephone Consultative Committee] consists as we recall, of transmitting texts, keyed into terminal, at 2,400 bits per second via the telephone system; they are then stored in the receiving terminal memory. A natural extension of the receiving terminal text handling, the teletex is considered to be the telex successor. At the conclusion of the DAII's [Directorate of Industrial and International Affairs] study, two manufacturers, Sagem and Alcatel Electronique (through its affiliate, Sintra), were selected (but contracts have not yet been formally awarded).

The second DAII study, carried out by EGT, presents a little less technical character: supplying the first 100,000 telecopiers for wide distribution to be marketed by EGT. The three manufacturers charged with developing the TGD [Wide-distribution Telecopiers] (Thomson-CSF, Sagem and Matra) have participated in the study. The winning bid was said to be formally announced on 11 May.

Other pending studies: the electronic satellite center and ITT's "System 12." The center has been dragging along since 1977, date of the industrial study. At its conclusion, four manufacturers (Jeumont-Schneider, SAT [Telecommunications Company, Inc.], Telic and the Matrit Group, formed by Matra, TRT [Radio and Telephone Telecommunications] and TIT [Toulouse Industrial Technical (Company)]) have been engaged to develop a low capacity, time-division autoswitch (up to 8,000 lines, expandable to 15,000 lines) for the French public network and, especially for export. When Telic's market research had been finished at the end of 1979, the three builders remaining in competition waited to know what the administration intended to order. A study on the installation of these satellite centers on trailers has been launched, but has not as yet reached any conclusions.

The CGCT Study and Nationalizations

Examination of ITT's "System 12" study no longer seems bound to be dissociated from a new definition of Telecommunications industrial policy. After about 2 years, CGCT, anxious about the interruption of space center operations by the DGT [General Directorate of Telecommunications], predicted to occur around 1983, offered to guarantee its continued operation by furnishing the numerical "System 12" developed in the ITT group. It was a political question to a high degree: On the one hand, CIT-Alcatel's "E-10" and Thomson-CSF's "MT" time-division centers seemed to moderately satisfy internal needs; on the other hand, could the DGT adopt a competitor's system while the first two experienced a true export "take off"? But again, the CGCT situation is deteriorating dangerously. That is why the DGT prepared to order three "Systems 12."

Today, the particulars of the situation are different. The CGCT [General Telephone Construction Company], like CGE and Thomson-CSF, is on the list of corporations to be nationalized. If the company is in fact nationalized--which depends, we must remember, on a law to be voted by Parliament--the company would be excluded from seeking a synergistic effect with the ITT group for export purposes. One would rather choose the "E-10" or "MT" manufactured by the CGCT.

Are we then heading towards a very large-scale integration between these three main PTT supplies? It is still too early to say.

But it is probable that new relations will be instituted among the manufacturers. Does that mean that cutthroat competition will be abandoned in favor of the "champion policy" mentioned by Mr Mitterrand during the last Salon des Composants?

Telematics

Finally, the new PTT minister will have to make clear his position regarding telematics. Mr Mexandeau's arrival coincides with the beginning of "Teletel" experiments in Velizy and the electronic directors in Ille-et-Vilaine (in 1982). Meanwhile, there is no need to believe that these experiments will give the minister a very long respite: the time factor plays a vital role in telematics and the French lead in this field is not more than a few months over their American competitors.

If Telic finds itself in a privileged position after Ille-et-Vilaine's order for 300,000 terminals, the other interested manufacturers (Matra, Thomson-CSF and TRT/RTC) are waiting impatiently for a government decision regarding widespread use of electronic directories. It is only at the expense of large-scale mass production that our builders will meet the challenge and keep themselves out of reach of competitors, who have very low costs and who will accept the challenge of telematics.

9626
CSO: 5500/2235

A 60-MHZ UNDERWATER COAXIAL LINE SYSTEM TO SICILY DESCRIBED

Rome NOTE, RECENSIONI, NOTIZIE in Italian Jan-Mar 81 pp 31-43

[Article by Engineer Andrea Bonati, of TELETTRA, Dr. Giuseppe Triolo, of the Telephones Services Agency, and Engineer Antonio Fadda, of ISPT: "Special 60-MHz Link Across the Strait of Messina"]

[Text] Summary

The project that has become necessary to make possible a 10,800 telephone channel link across the Strait of Messina on a pair of underwater coaxial cables is described in the present study.

In addition to a description of the plant, the special repeaters that have been produced and the characteristics measurements obtained are described in particular.

The results of the calculations and simulation experiments of the link are also reported. They show that, in spite of the exceptional nature of the stretch, the behavior obtained is similar to the behavior of normal 10,800-channel links.

1. Introduction

Links between the continent and Sicily are made at present by means of the following systems: two 960-channel cable links between Reggio Calabria and Messina, one radio link between Tanzaro and Catania and one 3,600-channel underwater cable link between Rome and Palermo.

For the purpose of making those links more effective, a highway main line with eight coaxial pairs is well on the way to completion between Nola and Regiio Calabria Messina and Catania and Messina and Palermo. Three 12-MHz systems are scheduled initially on that main line, interconnected by means of a radio link with a 5-beam 1,800-channel capacity. Subsequently, expansion is scheduled with a Nola-Reggio Calabria system and a Catania-Messina system, both 60 MHz. Therefore it is necessary to make a link across the strait with a 10,800-channel capacity, in order to maintain homogeneity of the communication facilities requested by some services and to avoid demodulation and remodulation at the terminals. Because there are no underwater systems with that capacity, since the ones produced up to now do not exceed a capacity of 4,140 channel, it is necessary to use a land system.

The purpose of the present article is to describe the planning criteria for that system, putting particular emphasis on the most interesting equipment and also on the measurements made on them.

2. Planning Criteria for the Link

The objective of the plan was to avoid intermediate amplification on the underwater stretch owing to obvious problems of mechanical compatibility, watertightness and so on of possible submerged repeaters. For that purpose, the shortest underwater layout among the ones usable (figure 1) was selected. In addition, a cable with the largest available diameter was adopted, precisely a cable with an outside conductor 1.47 inches (37.34 millimeters) in diameter, produced by the Standard Telephone and Cable Company, Limited, with a characteristic impedance of 54 ohms. On the other hand, it was not possible to use a 1.7-inch cable, because there is no version with metal sheathing.

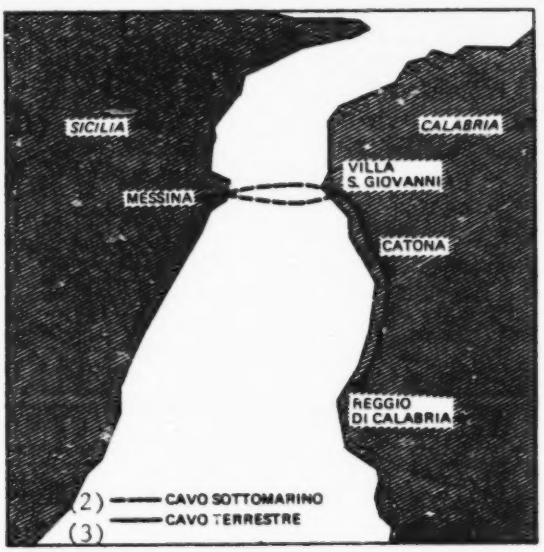

Figure 1. Layout of the 10,800-channel link between Messina and Reggio Calabria. Key: 1. Sicily; 2. underwater cable; 3. land line

The length of the sea stretch turned out to be 6.5121 kilometers. The attenuation characteristic follows, with good approximation, at a temperature of 13°C, the following trinomial law:

$$\alpha(f) = (K_1\sqrt{f} + K_2 f + K_3)l$$

in which

f = frequency in MHz
l = length in kilometers
$K_1 = 0.0839088$ (db/km) $\cdot \sqrt{\text{MHz}}$)
$K_2 = 0.026284$ (db/km) $\cdot$ MHz)
$K_3 = 0.097968$ (db/km)

The attenuation behaviors, measured and computed by the preceding formula, are shown in figure 2. Because the attenuation between the landing points, measured at a frequency of 61.160 MHz, is 54 decibels, in other words about 26 decibels above the nominal attenuation value of the amplification section of land systems, which equals 23.3 decibels, it was necessary to produce special repeaters to be installed at the ends of the underwater stretch. This solution accomplished with equipment from the TELETTRA Company makes it possible to obtain performance characteristics of the link included within the specified limits both with regard to noise and to overloading.

A cable with four coaxial pairs 2.6/9.5 millimeters, with two of its pairs arranged in order to be equipped with a 60-MHz system, was laid for making land connections between the landing points and the amplifying exchanges in Messina and Reggio Calabria.

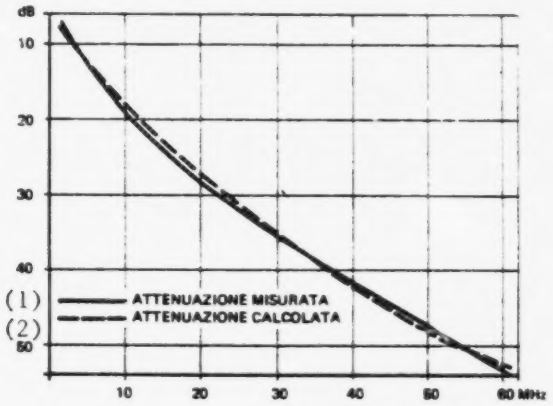

Figure 2. Attenuation of the submarine cable.
Key: 1. measured attenuation; 2. computed attenuation

Landing huts already in existence both on the Reggio side and on the Messina side are being used. The line equipment pertaining to the underwater stretch will also be installed in those places. The cable for the Reggio Calabria land section, about 13 kilometers long, leaves the landing hut presently at Torre Catona, follows commune and provincial roads in a trench for about 1.5 kilometers and finally it runs along the Salerno-Reggio Calabria superhighway for about 8 kilometers alongside the superhighway cable. Then it continues on for about 3.5 kilometers into the city reaching the ASST [State Telephone Services Agency] exchange in Reggio Calabria.

The cable for the Messina land stretch, about 2 kilometers long, follows mostly the SIP [Italian Telephone Company] city conduit.

The amplification points on the land section are provided in buried containers like the ones used for the highway network.

Figure 3 gives the connection diagram between Messin and Reggio Calabria indicating the lengths of the sections and their "exposures."

The values shown for each exposure type equal the maximums for each laying situation included in the type itself.

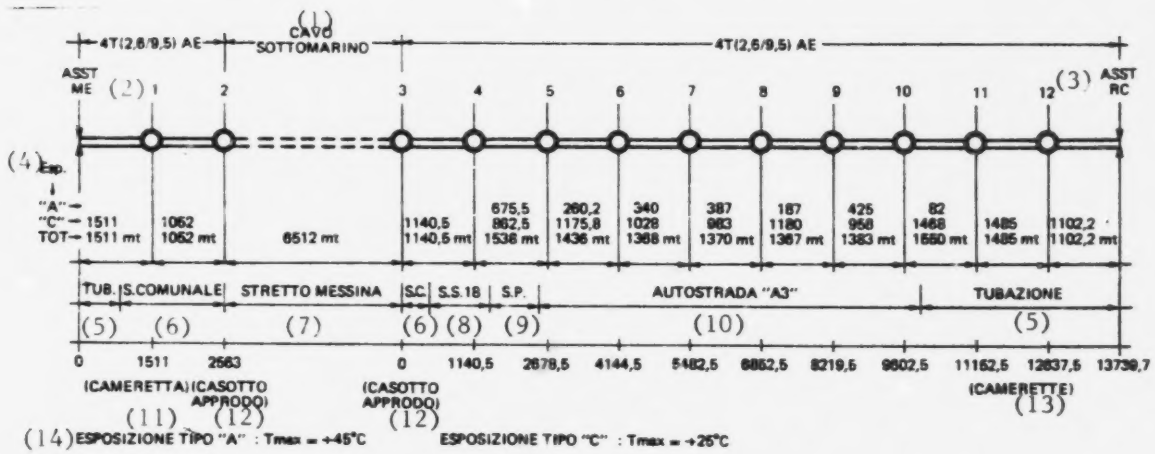

Figure 3. 10,800-channel coaxial cable link between ASST exchanges in Messina and Reggio Calabria.
Key: 1. underwater cable; 2. ASST Messina; 3. ASST Reggio Calabria; 4. exposure; 5. conduit; 6. commune road; 7. Strait of Messina; 8. secondary road; 9. provincial road; 10. Superhighway A3; 11. manhole; 12. landing hut; 13. manholes; 14. type A exposure: maximum temperature

Therefore, the computed situation turns out to be worse than the real situation, especially with regard to the calculation at minimum temperature, which was assumed to be symmetrical with the maximum with regard to the nominal temperature; but, while it is reasonable to suppose that particularly exposed sections may reach +45°C, it seems unlikely, on the other hand, that the same sections will go down to -15°C in the opposite season.

The equivalent ΔT was calculated for each repeater section

$$\Delta T_{eq} = \frac{\Sigma Ti \quad Li}{\Sigma Li}$$

and the behaviors of the output levels of the line amplifiers at the frequency of the main guide (61.16 MHz), at maximum and minimum temperature, by introducing the situation described so far into a special computer program. Figure 4 charts the computed behaviors.

At nominal temperature, the curve for the levels at the frequency of the main guide is always included between ±0.25 decibels at the output of each repeater.

3. Description of the Installation

Figure 5 gives a sketch of the installation that is expected to be provided. Remote power supply from the Reggio Calabria station is assumed.

It is seen from the sketch that it is possible to provide remote power supply from the Messina station as an alternative.

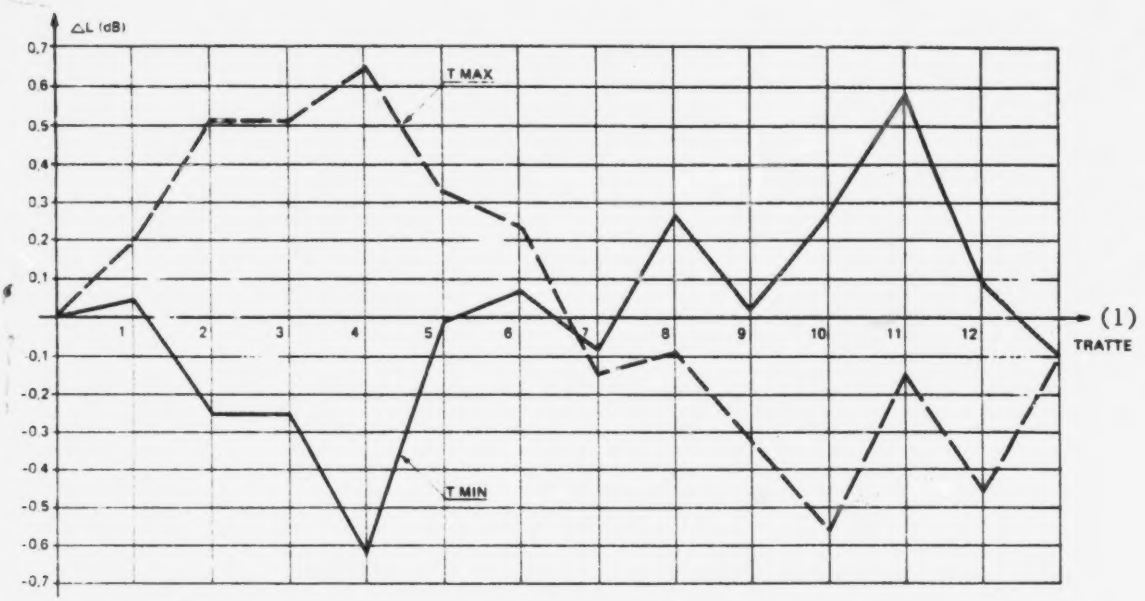

Figure 4. Sketch of the behavior of levels at maximum and minimum temperatures.
Key: 1. sections

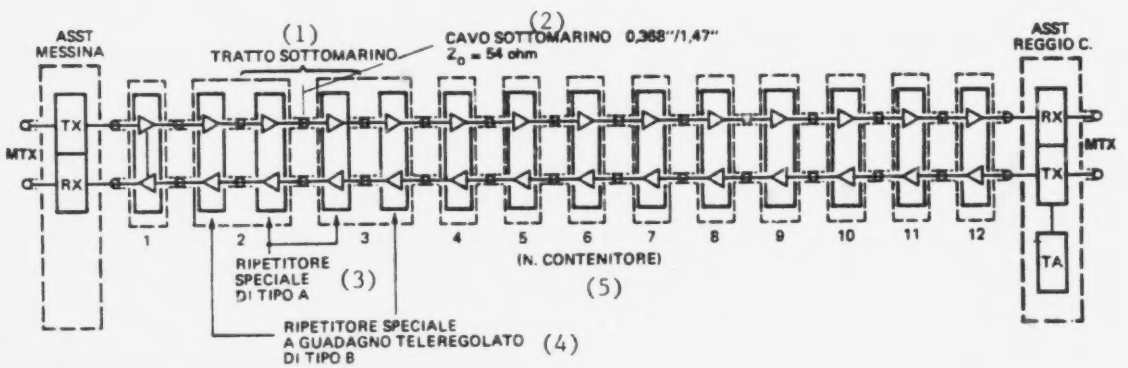

Figure 5. Simplified sketch of the 10,800-channel coaxial cable link between the ASST exchanges in Messina and Reggio Calabria.

Key: 1. underwater stretch; 2. underwater cable; 3. special type A repeater; 4. special type B repeater with remote-controller gain; 5. in container
NOTE: Repeaters 1 and 4-12 are of the normal type.
Repeaters 2 and 3 consist of a cascade of the two special type A and B repeaters.

Now we go on to a description of the underwater link section.

It is shown schematically in figure 6. It can be seen that two 10,800-channel repeaters in cascade, appropriately modified were used on both sides of the underwater section.

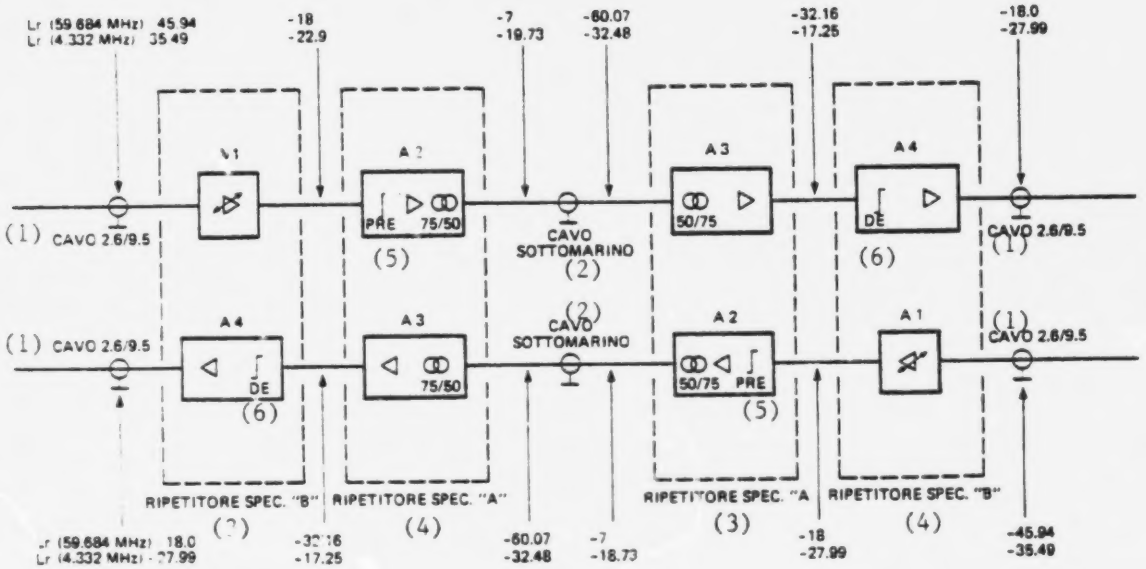

Figure 6. Diagram of the underwater link section.
Key: 1. cable; 2. underwater cable; 3. special B repeater; 4. special A repeater; 5. preemphasis; 6. deemphasis

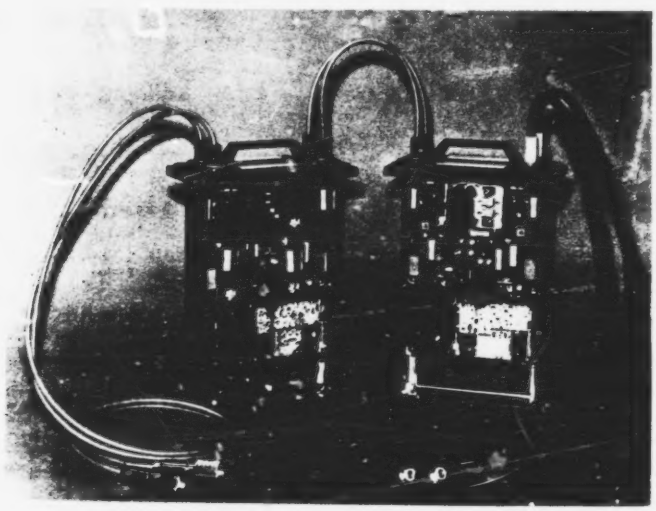

Figure 7. Special type A and B repeaters connected as in the installation.

With reference, for simplicity, to one single transmission direction, we give below the characteristics of the four amplification paths adjoining the underwater section in either of the two directions, which we shall call A1, A2, A3 and A4, respectively.

Messina-Reggio Calabria Direction

A1: normal 10,800-channel repeater path.

A2: special path, including
- i. additional preemphasis network.
- ii. high-overload, flat-gain amplifier.
- iii. 50-ohm impedance transformer-adaptor for the output toward the underwater cable.

A3: special path, including
- i. 50-ohm impedance transformer-adaptor in the input toward the underwater cable.
- ii. normal amplifier for 10,800 channels without preequalizer and set in fixed gain.

The sequence of the four amplification paths adjacent to the underwater section is exactly the same for the Reggio Calabria-Messina direction. Therefore, on the path opposite the type A1 path, there is an amplification path identical with the path shown with A4 and the same applies to A2 and A3.

Thus we see that, finally, the resultant structure of the repeaters involved is, on the whole of two types:

1. Special two-directional repeater (or type A) with path 1 with type A3 amplification and path 2 with type A2 amplification.

2. Special two-directional repeater with remote-controlled gain (or type B) with path 1 of type A1 amplification and path 2 with type A4 amplification.

This last-mentioned repeater differs from normal two-directional repeaters only in utilization, on path 2, of the additional deemphasis circuit (placed in the extension cable circuit position) and in the fixed setting of the amplifier placed on the same path. At any rate, the remote control arrangement is available if the temperature variations of the underwater stretch are greater than anticipated at present.

Therefore, the same configuration is installed on both sides of the underwater section. It consists of a cascade of two special repeaters: one type A adjacent to the underwater cable directly connected to a type B repeater adjacent to the land cable. An example of this configuration is shown in figure 7.

At this point, it is clear how, for these special repeaters, the establishment of connections and of the alternation of the various paths is unambiguous and definitely arranged and stems precisely from the special installation plan described above.

Moreover, because the characteristic impedance of the underwater cable is about 50 ohms, it has been determined advisable to use the output and input impedance for the repeaters on the transmission and receiving sides of the underwater stretch.

The necessary modification was made by replacing a transformer and redesigning a power filter, thus obtaining a greater overload margin with the same consumption.

The calculations and the remarks developed are found in appendix 1.

The level for the 59.684-MHz frequency at the input of the underwater cable was fixed at -7 decibels.

The level for the same frequency at the output of the type B repeater on the land side is the normal level for the system: -18 decibels.

The circuit making the additional preemphasis $p_2(f)$ also shows an attenuation equal to 3.62 decibels (at f_{max} = 59.684 MHz assumed as null attenuation frequency for $p_2(f)$.

Thus, the gain required at the flat amplifier in block A2 proves to be

$$G_{ampl.R2} = +18.00 - 7.00 + 3.62 + 0.36 = 14.98 \text{ dBpp}$$

in which an additional loss, equal to 0.36 decibels, due to the characteristics of the components used (for example the loss due to the impedance transformer-adaptors, was added.

If the attenuation curve of the underwater cable is known and if it is recalled that the A3 amplifier has no preequalizer, it is possible immediately to derive the signal levels at the various frequencies for the different sections of the stretch under consideration shown in figure 6.

4. Calculation of Noises on the Underwater Cable Stretch

These special 10,800-channel apparatuses were designed by setting the value of the noise introduced by the repeaters adjacent to the underwater section at 30 pWOp. An additional preemphasis circuit $p_2(f)$ was created, for this purpose, in order to optimize, with regard to the special flat gain amplifier (present in A2) both the minimum level of peak sinusoidal overload and the contribution to the intermodulation noises.

The corresponding plate is inserted mechanically in the position of the extension cable in type A2 paths. This causes a subsequent shaping of the multiplex signal spectrum (recovered later by the added deemphasis circuit present in A4), in addition to the shaping produced by the normal preemphasis of the 60-MHz system inserted in the transmission loop.

The added preemphasis was accomplished by means of two 2° grade cells.

Figure 8 shows the behaviors of the added preemphasis $p_2(f)$, of the normal preemphasis $p_1(f)$ and of the cascade of the two $p_1(f)$ X $p_1(f)$.

An overload reduction factor kp = -7.93 decibels is obtained with the cascade of the two preemphases $p_1(f)$ and $p_2(f)$, compared with a factor of kp = -4.78 decibels provided by the normal preemphasis $p_1(f)$ alone.

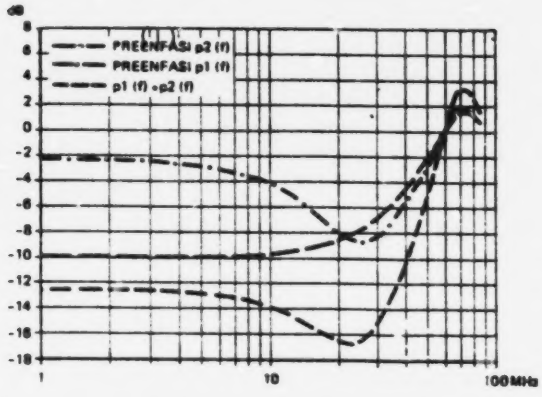

Figure 8. Attenuation of the normal preemphasis $p_1(f)$, of the added preemphasis $p_2(f)$, of the total preemphasis $p_1(f)$ X $p_2(f)$.
Key: 1. preemphasis

If we set the level at the output of the A2 amplifier at the maximum frequency at

$$Lru_{A2} \text{ (59.684 MHz)} = -7 \text{ dBr}$$

then level l_p of the minimum peak sinusoidal overload required of amplifier A2 will be given by

$$L_p = Pm + 10 \cdot \log_{10} N + F_p + Lru + kp$$

in which

Pm = average power of a telephone channel with reference to the relative level point 0 :-15 dBmO.

N = number of channels transmitted: 10,800.

F_p = peak factor of the multiplex signal with probability of being exceeded equal to 10^{-5}: 13 decibels.

Lru = nominal relative output level at the maximum signal frequency: Lru_{A2} + -7dBr

kp = overload reduction factor due to preemphasis: kp = 7.93 dB.

Then:

$$L_p = -15 + 40.3 + 13 - 7 - 7.93 = 23.37 \text{ dBm}$$

In order to keep a margin of 5 dB on the peak power, special amplifier A2 must have a peak sinusoidal overload equal to +28.37 dBm (in other words, with an rms [expansion unknown, probably relative average sinusoidal] overload of +25.37 dBm).

We now go on to the actual calculation of noises on the underwater stretch. Figure 9 shows the behaviors of the minimum values for the harmonic distortion coefficients $d_{20}(f)$ and $d_{30}(f)$ of the A2 path amplifier required for staying within the preset limit of 30 pWOp of total noise.

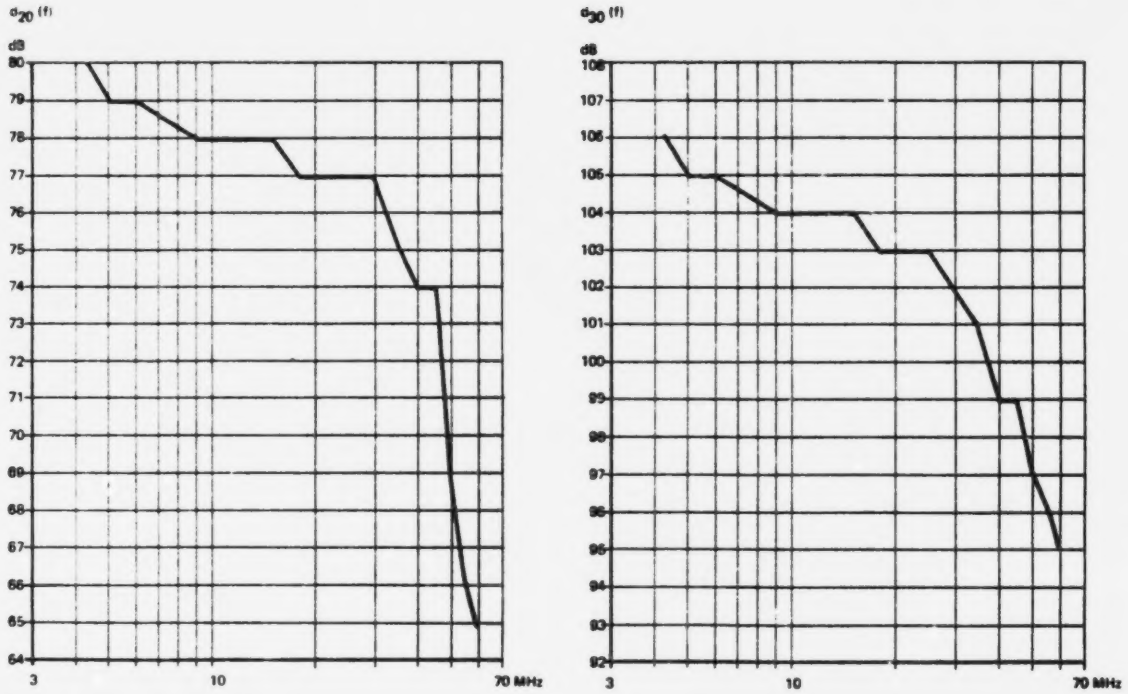

Figure 9. Minimum harmonic distortion coefficients $d_{20}(f)$ and $d_{30}(f)$.

Based on the proposed total preemphasis $p_1(f)$ X $p_2(f)$, values of the intermodulation noise distribution coefficients $Y_2(f)$ and $Y_3(f)$, shown in figure 10, were then calculated.

The values for thermal noise, second and third harmonic intermodulation and total noise generated by cascade amplification paths A2 and A3 on the underwater cable were obtained by introducing the above data in an appropriate computer program.

These data are shown in figure 11.

By adding to the noise contribution by the two repeaters adjacent to the underwater section the noise of the 12 remaining repeaters and the terminal noise, the total noise on the Messina-Reggio Calabria link is obtained. The respective contributions are presented analytically in table 1.

It can be noted that with regard to the terminal noise contribution the values attributed to the manual seasonal error equalizer were separated from the values of the terminal alone.

Computation of total noise variations under extreme temperature conditions was made at the maximum signal frequency at which there is worst noise.

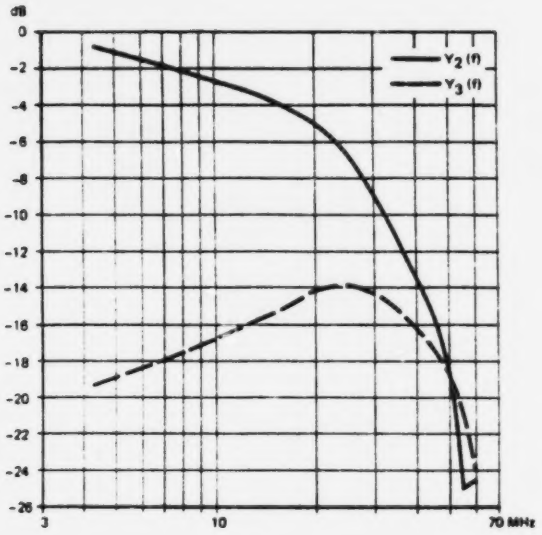

Figure 10. Behavior of intermodulation noise distribution coefficients $Y_2(f)$ and $Y_3(f)$.

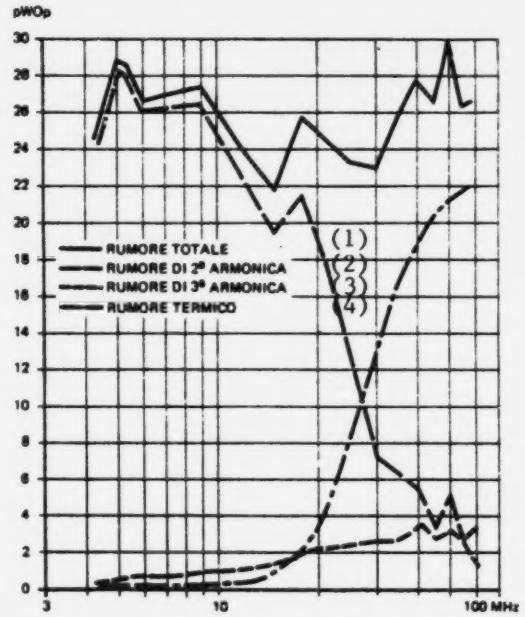

Figure 11. Underwater stretch noises
Key: 1. total noise; 2. second harmonic noise; 3. third harmonic noise; 4 thermal noise

Table 1: Total Noise Predicted on the Messina-Reggio Calabria Link

	5340 MHz	35748 MHz	55548 MHz
Terminal noise without manual seasonal error equalizer (pWOp)	7	7	10
Manual seasonal error equalizer noise (pWOp)	5	5	5
Repeater noise (pWOp/km)	0.4	0.8	1
Repeater noise adjacent to the underwater stretch (A2 + A3) (pWOp)	28.6	25.9	26.4
Total noise at nominal temperature (pWOp)	48.1	53	60

Thus, the following two noise values are obtained:

$$N_{tot} = 62.26 \text{ pWOp at maximum temperature}$$
$$N_{tot} = 58.2 \text{ pWOp at minimum temperature}$$

5. Special Type A and B Two-directional Secondary Repeaters

The block diagram for the special type A two-directional secondary repeater is given in figure 12.

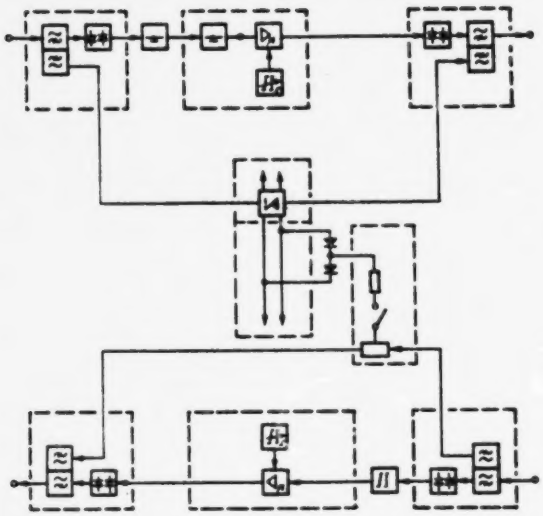

Figure 12. Block diagram of the special type A secondary repeater

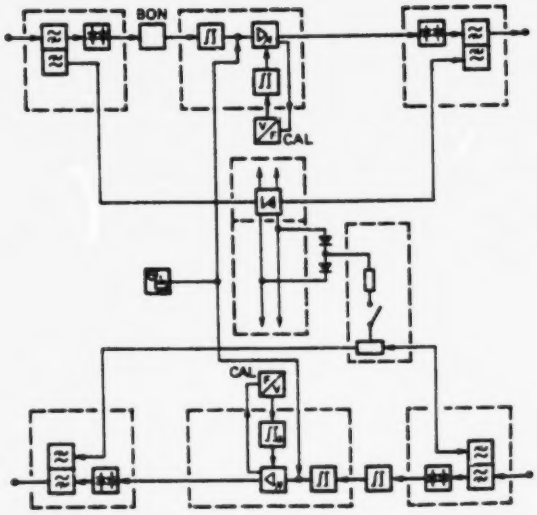

Figure 13. Block diagram of the two-directional, remote-controlled gain type B secondary repeater.

The normal repeater lacks the following circuits:

1. Radio frequency remote control oscillator.

2. Remote control circuit for each amplification direction.

In fact:

[a] Remote control in high frequency is handled by the oscillator present in the special type B two-directional secondary repeater coupled to the one under consideration.

[b] In order to handle the larger current absorption required by the amplifier at high overload (up to 185 milliamperes) present on path 2, the 10 milliamperes absorbed normally by the remote control oscillator and the 15 + 15 milliamperes absorbed normally by the two remote control circuits are used.

[c] Automatic gain control is not required for the amplification paths immediately adjacent to the underwater stretch, because the underwater cable undergoes negligible temperature variations and also its temperature coefficient value is $0.9X10^{-3}/°C$ (while the normal 2.6/9.5-millimeter coaxial cable has a temperature coefficient of $2.1X10^{-3}/°C$).

On the other hand, with regard to the following circuits:

1. Path 2 line complement

2. Path 1 preequalization,

3. Path 2 amplifier-preequalizer,

a replacement was made in the arrangement, as appears in figure 12, with the following circuits designed "ad hoc":

1. Additional preemphasis $P_2(f)$.

2. Line matched to 75 ohms.

3. High overload flat amplifier.

It was necessary to increase the typical voltage drop of the 60-MHz repeater (21.5 volts ±1 volt) to 26 volts ±1 volt, in order to provide the flat amplifier placed on path 2 with the required overload level.

The block diagram for the special two-directional remote-controlled gain type B secondary repeater is shown in figure 13. As has already been said, this repeater differs from the normal two-directional remote-controlled repeater, because on path 2 the amplifier works with a fixed gain arrangement and because the extension cable circuit was replaced with the additional deemphasis circuit.

Deemphasis consists of a cascade of four T-shunt type cells.

Simulation of the Entire Link Adjacent to the Underwater Stretch

A laboratory simulation of the entire link adjacent to the underwater stretch was made for a further check of the design calculations and of the measurements obtained on the individual special units.

Therefore, a circuit was designed and produced (artificial line) simulating in a serviceable sector a 50-ohm underwater link conduit with a length equal to 6.5121 kilometers.

With this kind of artificial line, it was possible to make the measuring link shown in figure 14.

The total noise measured on that kind of link in comparison with the noise computed at the nominal value of the output level is given in table 2 and is charted in figure 15. It can be concluded that the results are broadly within the predetermined total noise limits in the stretch and in the worst window (30 pWOp) and marginal toward overload (5 decibels).

It is, in fact, seen that, as is generally ascertained in practice, at the low part of the band the resultant noise is much lower than calculated, owing both to the lower value of the distortion coefficients obtained for the various amplifiers in comparison with the desired coefficients, and to the group delay variation in that band causing a better composition of the cascade noises.

Confirmation Measurements of the Special Repeaters

Confirmations were obtained by an ISPT [expansion unknown] representative, in the laboratories of the supplying company, from 2 to 4 July 1980.

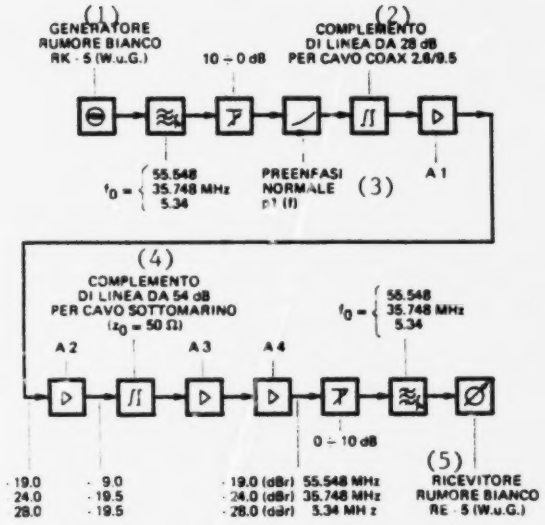

Figure 14. Block diagram for a simulation of the entire link adjacent to the underwater section for purposes of measuring total noise.
Key: 1. white noise generator; 2. 28-decibel artificial line for a 2.6/9.5 coaxial cable; 3. normal preemphasis; 4. 54-decibel artificial line for underwater cable; 5. white noise receiver

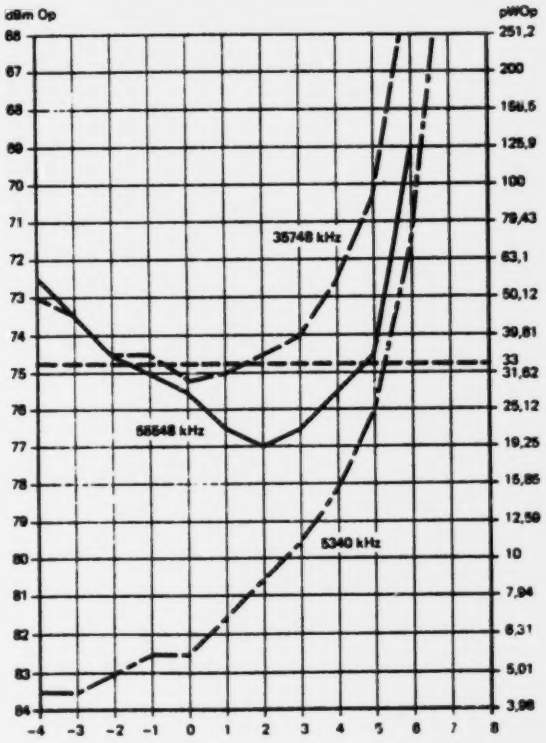

Figure 15. Total noise measured on the underwater section plus a land section.

Special attention was paid, in the choice and development of the measurements, to those measurements apt to characterize especially the various performances with regard to the normal characteristics of a line repeater for the 10,800 telephone channel system.

Thus, three samples of a special type A two-directional repeater and three of a type B repeater were examined.

The following measurements were obtained for the type A repeater:

a. Remote power supply voltage drop at the repeater heads and on its every individual path.

b. Reflection attenuation at the gates.

Table 2: Total Noise Measured on the Underwater Section Plus a Land Section

L_{ru} (dBr)	- 28		- 24		- 19	
Freq. MHz	5.340		35.748		55.548	
ΔL_{ru} dB	dBmOp	pWOp	dBmOp	pWOp	dBmOp	pWOp
- ∞	89.5	1.1	77	20	76	25
- 4	83.5	4.5	73	50	72.5	56
- 3	83.5	4.5	73.5	44.7	73.5	44.7
- 2	83	5	74.5	35.5	74.5	35.5
- 1	82.5	5.6	74.5	35.5	75	31.6
0	82.5	5.6	75.2	30.2	75.5	28
(1) Valore Calcolato	75.3	29.8	75.5	28.4	75.3	29.5
+ 1	81.5	7	75	31.6	76.5	22.4
+ 2	80.5	8.9	74.5	35.5	77	20
+ 3	79.5	11	74	40	76.5	20
+ 4	78	16	72.5	56	75.5	28
+ 5	76	25	70.3	93	74.5	35.5
+ 6	71.5	71	64.5	355	69	126
+ 7	62		55.5			

Key: 1. computed value

c. Paths A2 and A3 frequency level characteristic.

d. Self-induction.

e. Noise figure.

f. Total noise.

g. Intermodulation coefficients.

The following measurements were obtained for the type B repeater:

h. Reflection characteristic.

i. Path A4 frequency level characteristic.

l. Self-induction.

The results of the measurements obtained by using traditional automated plans with a computer, varied only to adjust the levels to the levels required by the special repeaters, are given below in outline form.

a. Remote power supply voltage drop:

The remote power supply current is 330 milliamperes. The results are given in table 3, below.

Table 3: Supply Voltages for the Special Type A Repeater

Register number	001	002	003
Voltage drop on the two-dimensional repeater (volts)	26.6	26.9	26.8
Voltage drop on the two-dimensional repeater (volts	25.36	25.63	25.51
Voltage drop on path A2 (volts)	22.28	22.4	22.34

b and h. Reflection attenuation:

The reflection attenuations at the various gates in the band from 3 to 100 MHz were measured and printed. Only the worst values picked up on the useful signal band (4.332-59.684 MHz) are given in table 4.

Table 4: Minimum Reflection Attenuation Values at the Gates of the Special Repeaters (in decibels) (Worst values in the 4.332-59.684 MHz band)

		Path 1		Path 2	
	Register No.	Input	Output	Input	Output
Special Type A Repeater	001	19.73	22.09	22.33	17.05
	002	18.93	24.43	24.14	16.17
	003	21.14	24.96	27.76	17.42
Special Type B Repeater	001	22.88	21.79	27.99	22.71
	002	20.14	23.25	27.78	23.81
	003	20.96	28.19	28.62	21.87

c. Frequency level characteristic:

The measurement given is the result of a computer processing of observations taken in rapid sequence automatically, in order to reduce to the minimum the errors inherent in the measurement bench and to have precise results within ±0.02 decibels. The curves for the behaviors desired for the gain of the two paths are given in figure 16. By subtracting the corresponding objective values from the measurements, the deviation values are obtained. The maximum values observed on the useful band are given in table 5.

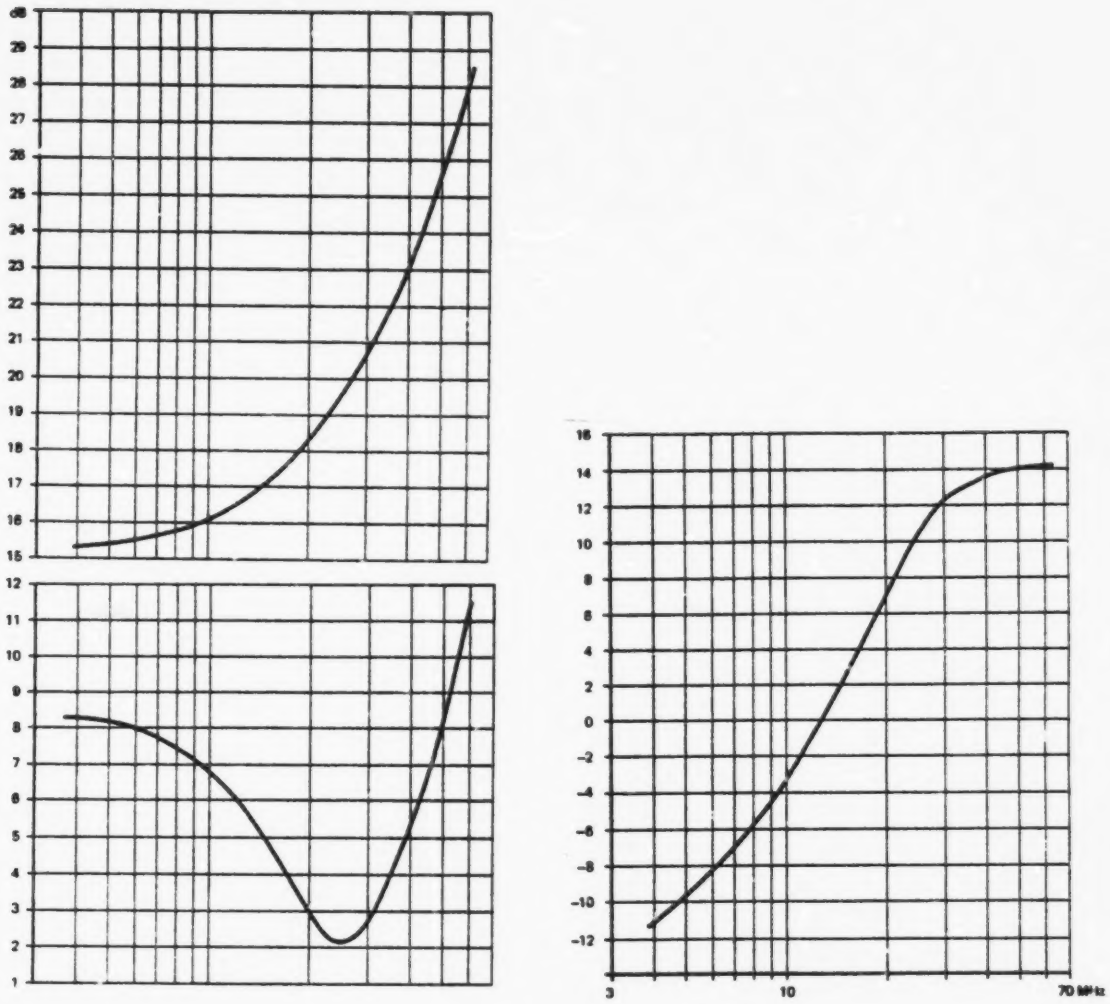

Figure 16. Path 1 and 2 gain of the Special Type A repeater and of path 2 of the Special Type B repeater (in sequence from bottom to top).

Table 5. Deviations of the Frequency Level Characteristics Measured by the Special Type A Repeaters

Register Number/Path	001/1	001/2	002/1	002/2	003/1	003/2
Maximum positive deviation (decibels)	+0.11	+0.13	+0.13	+0.14	+0.13	+0.19
Maximum negative deviation (decibels)	-0.13	-0.16	-0.16	-0.16	-0.11	-0.10

d. Self-induction

The minimum values measured for the self-induction deviation on the useful band are given in table 6

Table 6: Minimum Self-induction Deviation Values Measures on the Useful Band for the Special Type A Repeater

Register Number	001		002		003	
Self-induction direction (Path→X Path→Y	1→2	2→1	1→2	2→1	1→2	2→1
Minimum self-induction deviation (decibels)	125	106	124	105	124	109

e. Noise figure:

Noise figure measurements require special precautions and would, moreover, seem to be redundant when, as in this case, there are also measurements of total noise. It was, however, decided to require them, in order to characterize the repeater as completely as possible.

The following are the results:

Noise figure of the path of type A2: F1 = 10 dB (at 55.548 MHz)

Noise figure of the path of type A3: F2 = 4.2 dB (at 55.548 MHz).

f. Total noise:

Figure 17 shows the behaviors measured for the total noise of path A2 of the Type A repeater.

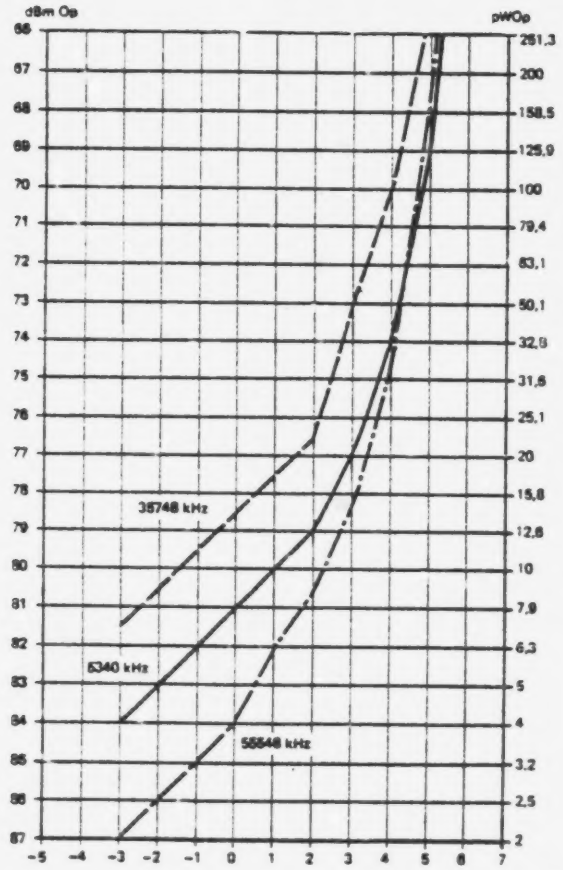

Figure 17. Total noise on path 2 of the special type A repeater.

g. Intermodulation coefficients:

The values measured for the intermodulation coefficients of path 2 of the special repeater with 0 dBm at the output for each measurement tone are given in table 7.

Table 7: Intermodulation Coefficients d_{20} and d_{30} of Path A2 of the Special Type A Repeater

Register Number	001	002
d_{20} (f = 5.34 MHz)	81	82
d_{30} (f = 5.34 MHz)	105	106
d_{20} (f = 55.548 MHz)	70	69
d_{30} (f = 55.548 MHz)	103	106

i. Frequency level characteristic (Path A4):

The desired behavior curve for path A4 is given in figure 14 [sic, possibly should read 4]. By subtracting the corresponding objective values from the measurements, the deviation values are obtained. The maximum values observed on the useful band are given in table 8.

Table 8: Frequency Level Characteristic Deviations Measured by the Special Type B Repeaters

Register Number	001/A4	002/A4	003/A4
Maximum positive deviation (decibels)	+0.17	+0.17	+0.17
Maximum negative deviation (decibles)	-0.14	-0.14	-0.12

Because the opposite amplification path is a normal 10,800-channel path, therefore the normal test values contained between ±0.07 decibels are applicable.

1. Self-induction

The minimum values measured for the self-induction deviation on the useful band are given in table 9.

Table 9: Minimum Self-induction Values Measured on the Useful Band for the Special Type B Repeater

Register Number	001		002		003	
Self-induction direction (path X → path Y)	1 → 2	2 → 1	1 → 2	2 → 1	1 → 2	2 → 1
Minimum self-induction deviation (decibels)	116	109	115	108	118	102

Appendix 1

The effects of a failure to match 75-ohm repeaters with 50-ohm cable are:

a. Appearance of the roll effect.

b. Loss on overload.

c. Alteration of the gain-frequency response curve.

Point c is avoidable, at any rate, by designing equalization of the repeater at 50 ohms. Therefore, we are examining only the first two points.

a. Roll effect

According to bibliographical reference 3, calculation of the amplitude of the roll effect at 4.3 MHz provides the following result:

$$Att._{line}(f=4.3\ MHz) \approx 3.8 \cdot 3.51 = 13.34\ dB \approx 13\ dB$$

Assuming that the repeaters are perfectly matched at 75 ohms, they give rise to a reflection coefficient with regard to the 50-ohm cable equal to

$$A_{refl} = 20 \lg_{10} \frac{75 + 50}{75 - 50} = 14 \text{ dB}$$

Then the result is, by placing

$$A_{refl_{in}} = A_{refl_{out}} = Arefl$$

$$N_{dB} = A_{refl_{in}} + A_{refl_{out}} + 2 \cdot Att_{line} = 54 \text{ dB}$$

Therefore, the peak value of the roll is

$$r_{dB} = 8.6859 \, e^{N_{dB}/8.6859} \text{ dB} = 0.02 \text{ dB}$$

If account is taken of the fact that there is only one repeater section in which a roll effect of that size appears, it is to be regarded as negligible.

b. Loss on overload due to mismatch at output

The output of a repeater with an fem generator E and internal impedance Z_G = 75 ohms is shown schematically in figure 18.

The following relations can be written:

$$V_L = \frac{E}{2} \cdot e^{-\gamma L} \qquad \text{in case } Z_O = Z_G$$

$$P_O = \frac{V_L^2}{Z_G} = \frac{\frac{E^2}{4} \cdot e^{-2\gamma L}}{Z_G} \quad (1)$$

If Z_O = 50 ohms $\neq Z_G$, the coefficient of reflection on the load, ρ_L, is

$$\rho_L = \frac{Z_G - Z_O}{Z_G + Z_O} = \frac{75 - 50}{75 + 50} = 0.2$$

By indicating the coefficient of reflection between line and Z_G with ρ_G, it can be deduced from its expression

$$\rho_G = \rho_L \cdot e^{-2\gamma L}$$

that it is practically negligible.

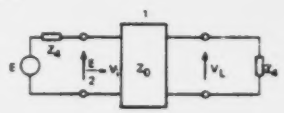

Figure 18.

On the other hand, the reflection coefficient between line and load turns out to be

$$\rho' = \frac{Z_O - Z_G}{Z_O - Z_H} = -0.2$$

Now we intend to calculate P_L/P_O. From the following relations:

$$V_i = V_i^+ (1 + \rho_G)$$

$$V_L = V_L (1 + \rho_L)$$

$$V_L^+ = V_i^+ e^{-\gamma L}$$

the following expressions are derived:

$$V_L = V_i e^{-\gamma_L} (1 + \rho_L)$$

$$V_L = V_i e^{-\gamma_L} \frac{1 + \rho_L}{1 + \rho_G} = e^{-\gamma_L} \cdot \frac{1 + \rho_L}{1 + \rho_G} \cdot \frac{E}{2} \cdot (1 + \rho') \qquad (2)$$

Therefore, the following results:

$$P_L = -\frac{V_L^2}{Z_G} \qquad (3)$$

The following is obtained by substituting (2) in (3):

$$P_L = \frac{1}{Z_G} \cdot \left[e^{-\gamma L} \cdot \frac{(1 + \rho_L)(1 + \rho')}{1 + \rho_G} \right]^2 \qquad (4)$$

Finally, the following is obtained from the ratio between (4) and (1):

$$\frac{P_L}{P_O} = \left[\frac{(1 + \rho_L)(1 + \rho')}{1 + \rho_G} \right]^2 \qquad (5)$$

In other words:

$$(P_L)_{dB} - (P_O)_{dB} = 20 \lg_{10} \frac{1 + \rho_L)(i + \rho')}{1 + \rho_G} = -0.36 \text{ dB}$$

Loss on overload due to mismatching, therefore, equals 0.36 decibels. There is also an additional loss from the moment when the amplifier output transformer no longer works with R_L = 75 ohms, but with R_L = 50 ohms (see figure 19).

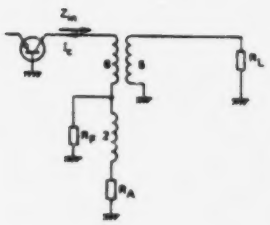

Figure 19.

In order to evaluate it, I note that in the nominal case of R_L = 75 ohms, the following results are obtained:

$$Z_{in} = 155 \text{ ohms}, \qquad I_C = 84 \text{ mA}$$

and therefore

$$V = Z_{in} \cdot I_C = 12.89 \text{ volts}$$

from which the power at the transformer input, P_O, turns out to be

$$P_O = \frac{V^2}{Z_{in}} = 27.32 \text{ dBm}$$

Moreover, because it is known that the loss on overload of the transformer is 1.24 decibels, the output power on R_L becomes

$$P_{(R_L = 75 \text{ ohms})} = 26 \text{ dBm}$$

If R_L = 50 ohms with the same procedure

Z_{in} = 114 ohms, I_C = 84 milliamperes $V = Z_{in} \cdot I_C$ = 9.48 volts,

from which

$$P_O = \frac{V^2}{Zin} = 26 \text{ dBm}$$

Because it is also known that in this case the loss on overload of the transformer is 1.21 dB, the output power on R_L = 50 ohms becomes

$$P_{(R_L = 50 \text{ ohms})} = 24.8 \text{ dBm}$$

with an additional loss of 1.2 decibels.

Altogether, failure to match the output and input of the repeaters connected to the underwater cable gives rise to loss of 1.56 decibels on overload.

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CSO: 5500/2263

END

JPRS 78831

26 August 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 177

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JPRS 78831

26 August 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 177

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BRIEFS

KUWAIT-BULGARIA TELEPHONE LINK--Communications Ministry Under Secretary 'Abd al-Rahman al-Ghunaym has announced that a direct telephone link has been installed between Kuwait and Bulgaria. He said the line will be operated manually temporarily until the automatic international exchange in Bulgaria comes into operation at the end of 1981. He said officials of the two countries felt, particularly following the visit of the communications minister and the Communications Ministry under secretary to Bulgaria, that there are many reasons for a direct telephone link between Kuwait and Bulgaria in view of the increasing number of Kuwaitis who go to Bulgaria on vacation or for medical treatment and the constant growth of bilateral trade. [GF181840 Kuwait AL-WATAN in Arabic 18 Aug 81 p 2]

CSO: 5500/2288

DACCA PLANS FOR SATELLITE GROUND STATION TOLD

Dacca THE BANGLADESH OBSERVER in English 21 Jun 81 pp 1, 8

[Text] The South-East Asian Regional Satellite Ground Station for resource survey will be set up in Bangladesh reports BSS.

Work for the Taka 30 crore station the first of its kind in the region will begin next month Dr R. A. Ghani State Minister for Science and Technology said this on Saturday.

The project will be implemented in three years with the assistance of French Government.

He said that an agreement in this regard will be signed in Dacca next week between Bangladesh and the government sponsored French manufacturing company "Society for European Propulsion (SEP)".

ENA adds: Dr Ghani said that the French Government has agreed to provide an assistance of Taka 28 crore for the project.

He said that the site of the station has not yet been selected but it will be somewhere near the capital city he added.

About the area to be covered by the station Dr Ghani said it will have the capacity to scan objects within four thousand miles diametre and two thousand miles radius covering almost one-third of the globe. "The station will be able to tract the French satellite Spot" he pointed out.

Explaining the objectives of setting up the ground station the State Minister said that it will carry out survey on agriculture cropping forestry fisheries water resources and process other physical data. The station will process images sent back by the satellite "Spot" he added.

Dr Ghani said that during his stay in Paris he held talks with French Minister of State for Research and Technology Mr Jean Pierre Chevenement. He said that he held discussions with the French Minister on the issue of cooperation between the two countries in the fields of science and technology space research remote sensing and oceanography.

Dr. Ghani also visited French Research Centre at Tuluse 700 hundred kilometres off Paris space craft manufacturing factory at Varnan 100 kilometres off Paris and

Oceanography Research Institute at Prest another French town. He also visited the International Exhibition on aeronautics and Space held in Paris.

On his way back Dr Ghani visited Jeddah and held talks with Deputy Foreign Minister of Saudi Arabia Sheikh Abdur Rahman Al-Mansur. He said that at Jeddah he attended the Islamic Cultural and Religious Affairs Ministers conference held at Mecca. He also performed Omrah.

CSO: 5500/7149

BRIEFS

FOREIGN-MADE TELEPHONE EQUIPMENT STUDIED--Proposals for manufacture of telephone instruments with foreign collaboration are now under consideration of the Government, reports PTI. There are two offers before the Government, one from Italy and another from West Germany for fully automatic production facilities for making one million instruments per annum. The need for foreign collaboration arises from the fact that indigenous capacity is not enough to meet the country's requirement. The existing technology available within the country does not ensure uniform quality. A new improved telephone instrument developed by the Indian Telephone Industries and the Telecommunication Research Centre (TRC) is not being taken up for production because of lack of infrastructural facilities particularly for improving the transmitter, receiver and the dial, according to the director Swaminathan. Also under discussion is the choice between the older analog system and digital system for the five lakh line capacity electronic exchange factory proposed to be set up in the country. The TRC has been engaged in developing telecommunication equipment and 15 items developed by it have been cleared for production in 1981. These include a radio system for providing seven telephone and five telegraph channels in remote villages and a rural electronic exchange with nine telephone connections. [Text] [New Delhi PATRIOT in English 13 Jul 81 p 8]

TELEPHONE INDUSTRY EXPANSION--New Delhi, 14 Jul (PTI): The Indian Telephone Industries (ITI) has approved plans for the expansion of its Srinagar unit for the assembly of 100,000 telephone instruments per annum. Under the proposal, the unit will at present assemble 677 telephone instruments, and in a phased programme, reach telephones in 1983-84. While the Srinagar factory will continue to receive important parts like transmitters, receivers and dials from the Bangalore and Naini factories, the unit itself will manufacture and procure other items through ancillary units. The capital cost of this expansion project is about Rs. 50 lakhs. The additional manpower estimated for this expansion is 99. The ITI also has a proposal to set up manufacturing facility for coiled telephone cords at Srinagar. A provision of Rs. 75 lakhs has been proposed in 1980-85 plan for the project. The additional manpower would be about 50 to 75. Starting with a production value of Rs. 3.75 lakhs in 1970-71, the value of the various products manufactured by the Srinagar unit reached Rs. 58 lakhs during 1979-80. [Text] [Bombay THE TIMES OF INDIA in English 15 Jul 81 p 7]

MADRAS-KHARAGPUR WIDEBAND MICROWAVE--Madras, 15 Jul--Work on the Rs. 17-crore East Coast wideband microwave project connecting Madras with Kharagpur was today inaugurated by Mr A. V. S. Mani, General Manager, Telecom Projects, Madras. The project has capacity of 1800 telephone channels and will provide stable circuits linking Madras, Nellore, Vijayawada, Visakhapatnam, Cuttack and Kharagpur. The network can also be used for TV relay between Madras and Calcutta like the existing facility between Madras and Bombay. The Madras-Vijayawada section of the project is expected to be commissioned by March 1982, in the first phase and the rest of the route will be progressively commissioned by December 1982. [Text] [Madras THE HINDU in English 16 Jul 81 p 12]

10-YEAR PLAN FOR SPACE PROPOSED--New Delhi, 19 Aug (AFP)--India proposes to develop space-borne tracking stations and new launch ranges for bigger and powerful [as received] rockets under the next 10-year space programme estimated to cost 85,400 million rupees (about 9,489 million U.S. dollars). A report on the programme profiles for 1980-90 presented before Parliament today siad India would become "self-reliant in launching operational satellites for remote sensing" before the end of the decade. The programme envisages the development of operational augmented satellite launch vehicles (ASLV) and polar satellite launch vehicles (PSLV) capable of launching 600-kg remote sensing satellites in sun synchronous orbit from Indian ranges. India's first remote-sensing satellite is to be launched from abroad in 1984 and a communications satellite (PROTO-INSAT) in 1986. Two multi-purpose satellites, INSAT-1A and INSAT-1B, will be launched from the U.S. in 1982 and 1983 and INSAT-1C in 1989 also from the U.S. The programme profile also envisages developing launch capability for geosynchronous missions. [Text] [BK191607 Hong Kong AFP in English 1537 GMT 19 Aug 81]

DUBAYY SATELLITE LINK--The UNITED NEWS OF INDIA [UNI] on 20 July commissioned the Dubayy-Delhi satellite link. With this it has become the first Indian news agency to employ modern means to provide coverage of events in the Gulf and neighboring states. The agency has already set up a Delhi-Dubayy satellite channel to serve newspapers in the United Arab Emirates. [Text] [BK211445 Delhi Domestic Service in English 1530 GMT 20 Jul 81]

CSO: 5500/7165

BRIEFS

ASEAN TELECOMMUNICATIONS MEETING OPENS--The second session of the inter-ASEAN international satellite communications conference opened in Medan, North Sumatra, this morning and will meet until 22 August. The director general of post and telecommunications, Suryadi, head of the Indonesian delegation, was elected chairman of the session. The meeting will, among other things, discuss the possibility of utilizing the Indonesian Palapa satellite for exchanging news between the five ASEAN member countries. The meeting will also discuss a report on using an ASEAN satellite for telecommunications. Meanwhile, the public relations officer of the Central Post and Telecommunications Office, told the RRI [Radio Republik Indonesia] station in Medan this morning that Indonesia, Malaysia and Singapore are making preparations for the laying of submarine cables, which will link the cities of Medan, Penang and Singapore. For this purpose, a survey will be conducted soon by the Directorate General of Post and Telecommunications, with the cooperation of a Japanese telecommunications firm. During the first stage, the submarine cable communications system will use 480 channels. [Text] [BK191435 Jakarta Domestic Service in Indonesian 1200 GMT 19 Aug 81]

CSO: 5500/2288

LASER FIBERGUIDE COMMUNICATIONS DEVELOPED

OW191125 Beijing Xinhua Domestic Service in Chinese 0108 GMT 18 Aug 81

[Text] Beijing, 18 Aug (XINHUA)--An experimental communications system consisting of a 3.3 kilometer-long laser fiberguide [ji guang guang dao qian wei 3423 0342 0342 1418 4928 4850] cable has been incorporated into Beijing Municipality's No 86 and 89 telephone bureaus since last February. Operations over the past 5 months show that the system's performance is good and free of disruptions or other mishaps. The system represents an important step by China toward modernizing its communications.

This new laser fiberguide experimental communications system is the result of the work of over 20 scientific research units, institutes of higher learning and related industrial plants in Beijing with the support of units concerned in other municipalities and provinces. In developing the system, Beijing's scientific and technological workers and other related personnel cooperated closely with one another and paid special attention to the system's overall stability and dependability.

Laser fiberguide communications makes use of light waves traversing fiberguide cables to transmit communications signals. This new method of communications has vastly greater capacity than the cable, microwave or carrier wave communications currently in use. Furthermore, fiberguide communications shows great resistance to electromagnetic interference and makes detection or wiretapping difficult. Some experts believe that fiberguide communications can be widely used not only by postal and telecommunications departments but also in the military, economic, scientific and cultural fields and to serve the people's livelihood.

CSO: 5500/2288

GEZHOU DAM MONITORING INSTRUMENTS SAID EFFECTIVE

Wuhan CHANGJIANG RIBAO in Chinese 12 Jun 81 p 1

[Article by Zhao Chengyi [6392 2052 5030] and Geng Shouren [5105 1343 0088]: "Gezhou Dam Engineering Project's Nearly Four Thousand Monitoring Instruments Serve Their Function; The Dongfanghong No 51 Vessel Participating in Experimental Navigation Is Equipped With a New Type of Wireless Telephone"]

[Text] Special report from the Gezhou Dam Site by CHANGJIANG RIBAO, June 11: This afternoon, this reporter learned from the Gezhou Dam construction site design representatives office of the Changjiang river valley planning office: The Gezhou Dam water conservancy project has nearly 4,000 "sentries" that can hardly be detected. They are intently holding their positions and serving effectively.

These so-called "ears and eyes" and "sentries" of the dam refer to the various types of monitoring instruments on top and below the dam. They observe changes in the dam using methods of optical measurements, measurements of the power source and the tubes and pipes to understand the safety and the utilization of the dam structures. They accurately provide various types of data for the scientific research and design personnel to carry out analysis and studies in time to examine the results of the design of the dam so that the scientific and technical level of building large dams in our nation can be continuously improved.

Related report: Today the communications group of the command headquarters of test navigation of Gezhou Dam equipped the Dongfanghong No 51 vessel with a very high frequency (VHF) wireless telephone which is of an advanced level in our nation at present to directly serve test navigation.

The VHF wireless telephone is a new type of wireless telephone that is strongly resistant to interference and which has a large emitting power. It can convert wired telephone into wireless telephone and convert wireless telephone into wired telephone communications. The Dongfanghong No 51 is the first vessel navigating along the entire Changjiang to be equipped with such a telephone at present.

According to the demands of test navigation, the Dongfanghong No 51 vessel is required to communicate with eight dispatching points above and below the dam during test navigation. After installation of the VHF wireless telephone today, test communication results were good.

9296
CSO: 4008/413

OPTICAL CABLE COMMUNICATIONS SYSTEM SET UP

Beijing BEIJING RIBAO in Chinese 20 Jun 81 p 1

[Article by Zhang Dungong [1728 2415 1872]: "Our Nation's First Optical Cable Communications System Is Set Up in Beijing; It Has a Large Capacity, Is Reliable, Is Strongly Resistant to Interference; Eavesdropping Is Difficult; It conserves Copper Materials"]

[Text] Our nation's first 3.3-kilometer, 120-channel optical cable communications system has begun trial operation in our city at the beginning of June. This is one of the major scientific research achievements of our city, and it signifies that our city's telephone communications has begun to enter into a new stage. This optical cable communications system was completed in Beijing in September, 1979. It is installed between the telephone branch offices No 86 and No 89. After over one year of parallel network experiments and improvement, it has now completed its predetermined plans. The scientific committee of Beijing City held an evaluation meeting during the first 10 days of June. The meeting held that the various transmission characteristics of the 3.3-kilometer optical cable communications system in Beijing are basically stable, the practicality has reached the advanced levels in our nation at present, it already possesses conditions for trial operation in the field, and it can be handed over for trial operation and shoulder the tasks of daily telephone communications.

The optical cable communications system consists mainly of three parts, the electrical terminal, the optical terminal and the optical cable. The optical cable is made of silicon dioxide light guiding fibers. In the optical cable, light waves replace electrical waves in the electrical cable to realize transmission of information. Optical cable communications has a large communications capacity, its reliability is good, its resistance to interference is strong, eavesdropping cannot be easily done and it conserves copper materials. It is a means of communication that has a future for development. During the 1970's, this new technology was studied and developed internationally and competitively. At present, only a few nations have realized commercial applications, and most of the nations are still in the trial use stage.

The research work for optical cable communications in Beijing began in 1976. Under the support of the State Scientific and Technological Commission and the Ministry of Posts and Telecommunications, the Beijing City Scientific Committee organized Beijing's schools of higher education, the scientific research academies and institutes, factories and the Beijing City Telecommunications Bureau totaling over 20 units and spent 5 years to develop the system successfully. This research achievement has contributed towards developing the capitol's communications business.

9296
CSO: 4008/413

VILLAGE WIRED RADIO STATION

Hanoi HANOI MOI in Vietnamese 13 Jun 81 p 1

[Text] Recently, with the active assistance of the Hanoi Broadcasting Station, Vong Xuyen Village completed and placed into operation a village wired radio station. The station system consists of 20 loudspeakers with 10 to 25 watt output utilizing 7.5 kilometers of wire and two amplifiers valued at over 50,000 dongs. Of this sum the State supplied 24,000 dongs and the village provided 26,000 dongs. This is the first village wired radio station in Phuc Tho District constructed jointly by the State and the local people.

CSO: 5500/4589

BRIEFS

SUSPENSION OF 'BBC' BROADCAST--[From the Congressional report]--Senator Marcos Freire has asked the government to negotiate with British officials the reestablishment of radio programs broadcast in Portuguese by the BBC in London. Protesting for the suspension of these programs, Freire stated that this fact has deprived thousands of Brazilians of a valuable source of information and culture. [Text] [PY140023 Brasilia Domestic Service in Portuguese 2200 GMT 13 Aug 81]

CSO: 5500/2287

BRIEFS

INCREASED TELEPHONE SERVICE--A digital switching central with a capacity of 8 million circuits was put in service by the Costa Rican Electricity Institute (ICE) to meet the growing demand for telephone service in the metropolitan area. The equipment was inaugurated by the president of the republic, Rodrigo Carazo Odie, who commented on the need to exploit the nation's energy resources and to the communication system. The tandem central was acquired for three and a half million dollars from a Swedish firm and will serve to handle telephone calls from San Jose, Heredia and part of Cartago, from its location in the ICE building on Second Avenue. The instituto acquired also modulation by codified impulse equipment, that is, equipment to complete the central for an amount of $4,418,507, resulting in a million dollar investment on both sides. According to what was mentioned, among the benefits which the telephone central will provide, is the avoidance of future saturation of the system resulting in annoyances suffered by the callers. Likewise, it was explained that the central will be able to handle more calls more rapidly, because it is digital, which differentiates it from those which ICE presently used and which are electromechanical and analogical. [Text] [San Jose LA REPUBLICA in Spanish 16 Jul 81 p 2] 9678

CSO: 5500/2276

USE OF INTELSAT V TO BEGIN IN MID-1982

Caracas EL NACIONAL in Spanish 31 Jul 81 p C-3

[Article by Eduardo Delpretti: "Venezuela in the Orbit of Intelsat Satellite V"]

> [Text] The project will be underway by the middle of next year at a total cost of approximately 84,256,000 bolivares. Its useful possibilities are infinite but in the beginning we will use it for transport and air travel, rural telephone operations, government television throughout the country, national defense, and petroleum data transmission.

Venezuela will go into orbit by the middle of next year with the Intelsat V satellite at a total cost of approximately 84,256,000 bolivares. Outer space will open its clouds for the peaceful use of the satellite system in support of the Venezuelan domestic system. The history of this project goes back only to last year when, on 25 July, the communications sector general manager submitted to the Ministry of Transport and Communications a memorandum dealing with the formation of a commission to study Venezuelan domestic communications by satellite The minister approved it.

Thus the commission began its work, meeting periodically with each of the possible user agencies for the system, such as Venezuelan Television, National Telephone Corporation of Venezuela, Petroleum of Venezuela, and its affiliates, the Ministry of Defense, and the Directorate General of the Transportation and Air Travel Sector. They tried to collect the data necessary for the dimensioning of the project.

On 16 September 1980, the directorate general of the communications sector, through CANTV [National Telephone Company of Venezuela], asked the International Satellite Telecommunications Organization (INTELSAT) to reserve, in the space segment of the organization, two and a half transponders for use by the national government. This reserved capacity was basically approved by the 44th Meeting of the Board of Governors of INTELSAT last December.

This was followed by meetings of the commission and, through the Technical Cooperation Agreement between Venezuela and France, a request was sent out for and approval was received for advice from the Satel Board in order then to proceed to the drafting of the project and the establishment of the goals.

Background of Intelsat V

Venezuela joined the organization upon signing the provisional accord of Intelsat on 22 December 1965. The final accord was ratified by Venezuela on 14 December 1972.

What is Intelsat? It is an organization whose main objective is to supply, on a commercial basis, the space segment necessary for providing all parts of the world, without discrimination, with international and national public telecommunications services.

The satellite channel has been exploited in the country since 1970 through international communications with the Intelsat III. Since then, Venezuela's participation in the area has been a regular operational activity for the earth stations at Camatagua and CANTV which is currently working through the Intelsat IV satellite.

In the middle of 1977, Venezuela, through CANTA, participated in the preparation of a domestic satellite called Project Condor to provide communication for the Andean region, Venezuela, Colombia, Ecuador, Peru, and Bolivia. Although this project has not yet been implemented, a joint announcement is expected together with the countries involved at an as yet undetermined date.

Starting in 1978, the Ministry of Transportation and Communications and CANTV began to receive offers for technical advice and turnkey projects to implement a satellite system in the country.

However, since there was no policy on that matter, it was impossible to come up with a significant response on that score. We know of a similar situation that arose in other government agencies, such as Petroleum of Venezuela, VTV, among others. There is no information as to the way these offers were processed.

But it must be emphasized that both the Ministry of Transportation and Communications and CANTV were very much concerned with promoting the use of satellites in the country and the project was postponed in expectation of a better opportunity.

Benefits from Domestic Satellite

The opportunity came with the appointment of the Commission for the Study of Venezuelan Domestic Communications by Satellite.

During the first talks among its members, the idea was expressed that domestic satellite communications were something that simply had to come in Venezuela. The benefits were immediately obvious.

Satellite communications are becoming cheaper each day through a reduction in the cost of launching and orbiting the satellite. The current technology has made it possible to build earth stations of smaller size and lesser cost. This is why this is something feasible and why it could be a supplementary alternative to the expansion and safety of the CANTV microwave net which the country already has; we expect that it will grow rapidly because of the high annual growth rate in the demand for telecommunications services rendered and even more so that will be rendered on short notice. Furthermore, the satellite channel will permit

lower costs when compared to conventional channels under the national VTV coverage plan, along with communications for the Ministry of Defense, with greater reliability and a greater degree of penetration.

But the possibilities of satellite use are infinite.

Earth Benefits from Sky

Some of the members of that Commission met in the office of Communications Sector General Manager Luis Leanez Lugo in the persons of Capt Julio Cesar Sanchez, of the Electronic Communications Service of the Armed Forces, Ramon Maldonado, Director of Communications Planning; Santiago Saavedra, General Manager of Venezuelan Television, and Silvia de Paez, Coordinator of International Affairs for the Commission.

"It is our understanding that Venezuela will lease two transponders out of the 24 in INTELSAT V. Now, what is a transponder?"

"It is a device made up of a receiver element and a transmitter element in the satellite. We are carrying out this first phase now, that is to say, the project will be developed in the form of the ground sement consisting of the remote antennas which receive and transmit, located at utilization points. We will use transponders of the hemispheric type, with the advantage of greater broadcasting power on a smaller surface, which is why the antennas are smaller in dimension and they are moreover economically more attractive for mass use. For each transponder we will pay $800,000 per year on the basis of a 5-year contract with INTELSAT.

On the national level, we will install 23 fixed remote antennas of 7.5 meters (the antenna at Camatagua measures 32 meters, to cover all borders plus ten major cities; we are going to have ten mobile antennas of 4.5 meters to cover the needs of PDVSA [Venezuelan Petroleum, Inc.] for its petroleum prospecting activities in the offshore zone, in the western and eastern and southern parts, and for the exclusive use of Ministry of Defense, plus a central antenna of 11 meters.

With them we hope to win an audience for VTV to the extent of 95 percent of the population, according to the promises of President Herrera, during the election campaign, with direct signals; we will also work toward the regionalization of television program production with studios in various administrative zones throughout the country. Looking at telephone operations, we will open 600 single-directional channels to cover almost 80 percent of rural needs. And we will meet all needs of Venezuelan Petroleum, the Directorate General of Transportation and Air Travel, the Ministry of Defense, and CANTV.

But the benefit of this domestic satellite can be extended to other organizations with whose authorities the Commission members will talk.

There are many examples for intergovernmental communications involving the Ministry of Foreign Relations and connected organizations such as DIEX [Export Directorate] and DISIP [Directorate of Intelligence and Prevention Services], the Ministry of Environment, which will get information on natural resources and their conservation, the Ministry of Health which could use the same equipment for various rural hospitals, to make highway patrols more effective; for communications between ports, for state police units and for PTJ [Judicial Technical Police]; as well as to get data on background information, fingerprints, and any other information in a rapid manner.

POST-REVOLUTION TELECOMMUNICATIONS PROGRESS REVIEWED

Tehran KEYHAN in Persian 20 Jul 81 p 11

/Text/ A review of the work of the Telecommunication Company in memory of the martyr Dr Mahmud Qandi. What stage has Iran's telecommunications reached 2 years after the Revolution?

The 7 Tir Karbela occurrence was a high point in the history of the Islamic revolutionary struggle and an indicator of the defeat of the practical methods of diversionary lines against true Islam. It so well proved its own deceitfulness because they must answer whether in their own mind they carried out a blood bath against those they considered "affiliated" with the East and the West or against those "affiliated" with beliefs for economic, cultural, and other independence who have followed independent policies despite ever-increasing stages of complications and difficulties. It is from among those who had responsible positions in agencies and ministries, that one can remember Dr Mahmud Qandi, the martyred minister of post, telegraph, and telephone who in reality was martyred while carrying out the independent policy of this ministry. In his efforts to achieve telecommunication self-sufficiency, he came up against obstructionism from the U.S., German, and French imperialist companies.

We now refer to a small part of the oil politics connected with imperialist domination and the activities of the Telecommunication Company within the framework of telegraph, telephone, and telex operations which comprised the major field of the ministerial work of martyr Mahmud Qandi. We specially draw attention to the activities of the past 10 months from Mordad 1359 to 1 Tir 1360 /23 Jul 1980-22 Jun 1981/ which appeared in the most recent statistics, a few days before his martyrdom, which reflect urban telecommunications, establishing rural communications facilities, international links, the provision of automatic dial systems, the number of telephones provided, etc.

Telecommunication Self-Sufficiency Vis-a-Vis Treachery by Imperialist Firms

Imperialist policies, as well as colonialist policies and domination oriented interferences over our telecommunications system during the previous regime is clear and we are now grappling with its problems. But because of the confidence of the government and martyred Dr Mahmud Qandi that an independent policy must be followed, the preparation of the inner-city telephone system expansion project, previously carried out by Japanese, French, and American engineers, is now being done by Iranian personnel. Moreover, before the Revolution, a 312 million deutchmark contract had been concluded with a German firm for the purchase and installation of new automatic-dial telephone equipment for inner-city systems. Following the Revolution, Iranian

personnel undertook the installation work, thereby saving 64 million marks. This entailed work in urban centers which will be enumerated later in this report. At the same time, another of the domination-seeking imperialist programs over the policies of this company to which martyred minister Mahmud Qandi had referred was the treachery of the U.S. corporation GTE /General Telephone and Electronics/ which stopped work on 190,000 nearly completed telephone numbers across the country and refrained from providing spare parts for the telecommunication facilities, contrary to agreements and international law, thereby imposing a spare parts economic blockade against us. In addition, the obstructionism of other similar companies, such as the German firm Siemens, in evading the delivery of telecommunication facilities were also a part of the pressure tactics used against the independent policy pursued by us, even though these corporations are duty-bound to supply spares as long as the equipment which they have sold are in operating condition.

The reorganization of the Telecommunication Company on the basis of provincial self-sufficiency and the re-orientation of the personnel work force on the basis of actual need has been implemented so far in the Provinces of Mazandaran, Gilan, East and West Azerbaijan, Khorasan, Kerman, Fars, Kermanshahan, Esfahan, and Khuzestan.

Installation and Operation of Facilities by Iranians

The installation of the inter-city automatic telephone systems by Iranian workers are among successful actions which are playing a major part in the self-sufficiency of the telecommunications system. In the 10-month period of Mordad 1359 to the beginning of 1360 /23 Jul 80-21 Mar 81/ these telephones were installed in Andimeshk in the beginning of 1360 while installations, operations, and changes in the systems were carried out in Quchan, Kord Kuy, Dameghan, Kazerun, Zarand, Baft, Babak, Bam in Kerman Province, and Rudbar in Rasht Province. New installations were set up in Dezful, Andimeshk, Tehran, Ahvaz, and Kord Kuy with 6 outgoing and 4 incoming lines via Gorgan to link with the General network. In addition, 4020 automatic telephone lines have been installed in 47 cities in the Central Province, Tehran suburbs, Gilan, Mazanderan, East and West Azerbaijan, Fars, and Kerman. Of these, 2824 numbers are now in operation.

In recent months work proceeded on the installation, operation, and expansion of telephone switchboards of inter-city and magnetic centers of many provincial cities, including the start of the operation of the magnetic center in Baneh in Kordestan Province, and the installation and the start of the operation of one Iranian switchboard in Dezful for use in inter-city links, as well as at the air bases in Bandar' Abbas.

Also in this period, a number of long-distance F-36 and other equipment which had lain as rejects in storage were installed through the good efforts of technicians who also expanded long-distance magnetic switchboards after rebuilding equipment. In the industrial sector, 53,500 of urban automatic telephone numbers were received from the Telephone Instrument Manufacturing Plant in Shiraz. Delivery of these had started in 1358 /21 Mar 79-20 Mar 80/.

Telex and "Gentex" Operations

In the telex and gentex /sic/ operations, the Telecommunication Company provided new customers with Latin and Persian units (number 186), and 14 new automatic telegraph lines were set up between provincial and city region (shahrestan) centers. Also, a number of transmitting, telegraph, and Persian keyboards were sent to the telecommunications centers in Ilam and Fars Provinces and Dezful. In the 10-month period of Mordad 1359 to Khordad 1360 the centers of Shahinshahr, Najafabad, Yazd, Zabol, Zahedan, Mashhad, Jahrom, Sabzevar, Neyshabur, Bushehr, Torbat-e Heydariyeh, Khoy, Maragheh, Tabriz, and Kermanshahan were joined to the international network as part of the international linkage program.

Rural Communication

In implementing the government's program that stresses the need for rural communications and bearing in mind that between 1343 and the end of 1359 /21 Mar 1964-20 Mar 1981/ a total of 329 rural centers had telephone links, during the year that ended on 20 Mar 1981 a total of 100 rural areas were provided with telephone services, while in the year which began on 21 Mar 1981 services for 555 rural centers have been drawn up and approved. By the end of June, 30 of these centers had telephone links while 230 preliminary projects, 110 detailed projects, and 38 other projects had been carried out. Action has also been taken for the purchase of 51 items needed for this project. The Telecommunication Company's statistics of annual installation of rural telephone services show that by the end of Khordad 1360 /21 Jun 81/ 492 rural centers had telecommunication links. Of these, 4 centers had had the service prior to 1343 /1964/. According to the same statistics, telephone links were set up in 13 rural centers in 1350 /21 Mar 71-20 Mar 72/ and in 10 rural centers in 1358 /21 1979-20 1980/ but the same statistics show that after the Revolution in 1358 the number of rural centers with telephone links were some five times more than the annual average of pre-revolutionary years.

According to the figures, in the past 10 months from 1 Shahrivar 1359 to 31 Khordad 1360 /23 Aug 80-21 Jun 81/ telephone links covered 8 points in the Tehran suburbs, 4 in the Central Province, 3 in Gilan Province, 7 in Mazandaran, 4 in West Azerbaijan, 13 in Fars Province, 8 in Kerman, 14 in Khorasan, 6 in Chahar Mahall va Bakhtiari Province, 2 in Ilam, 1 in Kohkiluyeh va Boyer Ahmad Province, 5 in Zanjan, 14 in Semnan, 5 in Sistan va Baluchestan Province, 8 in Yazd.

Urban Telecommunication Activity

Work carried out in the past 10 months at urban automatic telephone centers in various provinces are as follows: East Azerbaijan with a capacity of 121,000, West Azerbaijan 30,000, Esfahan 11,000, Tehran suburbs 16,000, Chahar Mahall va Bakhtiari, 14,000, and Khorasan with a 28,000 number capacity. Of these, the following have been either installed or installations are under way: East Azerbaijan 32,500, West Azerbaijan 13,000, Esfahan 5000, Tehran suburbs 8,000, Chahar Mahall va Bakhtiari 6,500, and Khorasan 7,000. Also, according to available figures the following places have these telephone unit capacities: Khuzestan 44,000, Zanjan 6,000, Semnan 26,000, Sistan va Baluchestan 27,000, Fars 75,000, Kordestan 15,000, Kerman 29,000, Kangavar 5,000, Gilan 48,000. Of these, the following units have been installed or will be: Khuzestan 6,300, Zanjan 2,500, Semnan 8,500, Sistan va Baluchestan 7,500, Fars 22,000,

Kordestan 5,500, Kerman 8,000, Kangavar 2,500, Gilan 12,400. Also, according to these statistics, the capacity of Lorestan Province has been increased from 12,000 to 20,000 units and that of Mazandaran from 13,000 to 19,000 while 83,000 units can be installed in the Central Province, 20,000 in Hormozegan Province, 6,000 in Hamadan and 30,000 in Yazd. Of these, the following units have been installed or installation is under way: 6,500 in Lorestan, 28,000 in Mazandaran, 12,500 in Central Province, 3,500 in Hormozegan, 2,500 in Hamadan, and 12,650 in Yazd.

Telephones Installed in Tehran

According to available statistics, a total of 424,600 telephones were connected up to the year 1359 /1980-81/. Of these, 412,032 were in operation. But the figures concerning the activities and changes in Tehran telephone exchanges within the past 10 months show that 30,000 new units were installed with 1,200 operating. Also, up to Farvardin 1359 /21 Mar 80/ Tehran had 276,430 telephone subscribers while in the last 10 months 24,987 subscribers have been added to that figure. Also, 7,211 telephone lines have been set up and 125 new public telephone booths have been installed in Tehran. Moreover, from Shahrivar 1359 to Ordibehesht 1360 /23 Aug 80-21 Apr 81/ a total of 53,282 telephone numbers have been assigned throughout the country while in the same period 25,700 switching telephones have been installed and 21,945 cable networks laid throughout the country.

Asadabad Telecommunication Base

Before the revolution, the expansion and maintenance of the Asadabad international communication base was undertaken by American, Japanese, and Filipino experts and Iranian experts were not allowed to participate in any way in the upkeep of the center. Following the Islamic Revolution, qualified young Iranians devoted round-the-clock total dedicated efforts not only to the proper maintenance of the facility but to correcting defects in gauges and measuring equipment, in improving the quality of the system and in operating lines. During a visit to the center by the speaker of the Islamic Consultative Assembly, all the technical personnel were commended. Repairs to receiving and transmitting equipment, repairs to the international automatic telephone system, increase of operational channels from 8 to 24 and putting the system's computers into operation are among other accomplished activities.

5854
CSO: 5500/5512

BRIEFS

PERTRA-JNA EXPANSION PROJECT--Amman, (PETRA)--PETRA-JNA has started the implementation of a project aimed at boosting and expanding its transmission station. The project will increase the area of transmission of the present station in order to convey the Voice of Jordan to new regions in the world and to enable various other world news agencies to receive the agency's transmission. The new project, which will begin its experimental transmission during the next 2 weeks, will cover Africa and the eastern parts of Asia. Under this project, a new 10 kw-strong transmitter and a rotating logarithmic antenna will be installed. Transmission of the present station covers Europe, North Africa and the Arab homeland by means of two 10 kw-strong transmitters installed at the beginning of 1979. [Text] [JN160911 Amman AR-RA'Y in Arabic 16 Aug 81 p 3]

CSO: 5500/2288

BRIEFS

NEWS AGENCY ANNOUNCES NEW SATELLITE LINK--Kuwait, 18 Aug (KUNA)--The Communications Department of Kuwait News Agency (KUNA) announced today it has developed a new system that will enable the agency's bureaus and subscribers in different countries to receive its news service simultaneously. KUNA satellite lines have been hooked to a distributor to enable all receiving points to receive the transmission at the same time, Communications Chief Hassan al-Khabbaz said. Al-Khabbaz cited the example of Bahrain, Vienna and London where subscribers to both the Arabic and English services are already receiving KUNA transmissions at the same time. [Text] [GF191221 Kuwait ARAB TIMES in English 19 Aug 81 p 6]

CSO: 5500/2288

'VOICE OF HOPE' TV STATION TO BEGIN TRIAL BROADCASTS

TA122007 Jerusalem Domestic Television Service in Hebrew 1900 GMT 12 Aug 81

[Text] The television station of the Voice of Hope [name as heard] will shortly start trial broadcasts from southern Lebanon. This was stated this evening by Hotelier Hayim Schiff. He confirmed he is a business partner in the establishment of the station.

Communications Minister Mordekhay Tzipori said today that as long as there is no law to regulate the issue of broadcasts the Communications Ministry does not intervene in the policy of broadcasts and a draft proposal will soon be brought for discussion in the government.

The first shipment of electronic equipment slated for the station has already reached the Haifa Port, our correspondent Rafiq Halabi reports:

[Begin videotape] (?HVN)--This is the name of the television station Sa'd Haddad intends to set up in southern Lebanon. For this he ordered a special broadcasting van from the United States and it has been setting here for nearly 2 weeks on the queue in Haifa Port, under very difficult safety conditions. The van is carrying an identification plate from Illinois in the United States and is dedicated to Maj Sa'd Haddad. A symbol of the red shield of David and a cedar tree decorate the van with the addition of the name Star of Hope. It should be noted that in southern Lebanon a radio station named the Voice of Hope is broadcasting in southern Lebanon. The broadcasting van is locked. A few days ago a truck passing here hit it. The damages are slight indeed but today we noticed a leak of oil from the van. Lately there has been a great deal of talk about an independent television station in southern Lebanon. There were confirmations as well as denials in the meantime. If the station [meaning the equipment in the van] is indeed transferred to southern Lebanon a permit by the IDF authorities and the state of Israel is necessary. [End videotape]

Our military correspondent has learned from the Defense Ministry that it knows of no Israeli partner to the Voice of Hope [name as heard] and that television equipment is handled like any other merchandise transferred to southern Lebanese residents.

CSO: 5500/2288

BRIEFS

BROADCASTING JOB ACTION ENDS--The Ghana Broadcasting Corporation has resumed its normal services which were interrupted yesterday and this morning. The departure from normal program schedules and practices were due to internal difficulties caused by differences between production staff, union executive and management. Persistent efforts have been made to resolve the situation. Those involved in the efforts consisted of the parliamentary committee on information and presidential affairs under its chairman, Dr Appianda-Arthus; the production staff; the union executive; management and chairman of the board of directors of the corporation, Mr Eric Otoo. [Excerpt] [AB121442 Accra Domestic Service in English 1300 GMT 12 Aug 81]

CSO: 5500/5062

BRIEFS

OLD BROADCAST RETURNING--Radio Liberation-The Voice of the PAIGC, is again being broadcast by our national radio. The weekly program will be broadcast every Wednesday following the news at 1300 hours in Portuguese, and at night, also following the news, in Creole. Broadcasts in national languages are on a daily basis. It should be noted that Radio Liberation, which began broadcasting on 16 July 1967, in support of freedom fighters and of our people, ceased operating on 10 September 1974, with the de jure recognition by the Portuguese government of the Repbulic of Guinea-Bissau. Radio Liberation was reduced to silence after independence by those who, during this dark period in the history of our party, the PAIGC, were gradually killing the party, depriving it of its best weapon, criticism and self-criticism, blind to the fact that they were actually killing themselves. Radio Liberation is finding its voice--the Voice of the PAIGC--at a time when a party instrument is needed to express and propagate partisan opinion, to face the innumerable assaults by opportunists and pseudo-revolutionaries and to inform the people of the ideological debates taking place in the country following the victorious 14 November events. [Excerpts] [Bissau NO PINTCHA in Portuguese 29 Jul 81 p 3]

CSO: 5500/5061

BRIEFS

NIAMEY-LAGOS TELEPHONE COMMUNICATIONS--The work of the Nigerien-Nigerian joint commission on cooperation began on Monday, 6 July, in the conference rooms of the Postal, Telephone and Telegraph Service and came to a close on Friday, 10 July. Following the meeting, the executive secretary of the joint commission, Gabriel Sam Akunwafor, summarized the business of the session at a press conference. Two recommendations were made by the ministers: one concerning the proposed construction of the council chambers of the Secretariat of the Nigerien-Nigerian joint commission and one concerning PANAFTEL [Pan-African Telecommunications Network]. The cost of the Secretariat headquarters will be some 642 million. "We hope that the work will get underway in August-September. Before the end of 1981, the Secretariat of the commission will be transferred to its new headquarters." PANAFTEL is currently in the call-for-bids stage. "The contract will soon be awarded and we hope that this link will be operational sometime in 1982." This will enable our countries to exchange television programs and to communicate by telephone, telex or telegraph. "Concerning the Secretariat, we wish this PANAFTEL project success because it is the most advanced in Africa at the present time." [Excerpts] [Niamey LE SAHEL in French 13 Jul 81 pp 1, 3] 11,464

CSO: 5500/5054

INTERNATIONAL COMMUNICATIONS EXHIBITION TO BE HELD IN MOSCOW

Moscow VESTNIK SVYAZI in Russian No 6, Jun 81 p 31

[Article by T. A. Emenova, Chief Engineer, Main Scientific and Technical Administration: "Communications-81"]

[Text] The second international specialized exhibition "Communication Systems and Facilities, 'Communications-81'" will be held in Moscow in "Sokol'niki" Park from September 2 to 16, 1981. Here, the Soviet Union and firms of various countries of the world will show their equipment under the slogan "Communication Facilities at the Service of Society and Man". The exhibition is organized by the Ministry of the Communications Equipment Industry, Ministry of Foreign Trade, Ministry of the Radio Industry, Ministry of the Electrical Equipment Industry, Ministry of Communications, USSR Academy of Sciences, and others.

The Soviet exhibit will include more than 3000 items and will occupy about 6000 sq meters of enclosed areas and 2000 sq meters of open areas. The introductory section will familiarize visitors with the participation of the USSR in international commucation systems. It will include models of communications satellites, panels showing international communication systems, as well as specimens of the equipment used in these systems. Another large panel will familiarize visitors with the structural principle of the Unified Automated Network of the Soviet Union (YeASS).

An important place at the exhibition will be occupied by the equipment of satellite communications, television, and radio broadcasting. Equipment will be shown for digital transmission of radio broadcasting programs and photoelectric signals of images of newspaper pages via satellite communication lines "Orbita-RV", and communications facilities of Olympics-80.

In this section, the USSR Ministry of Communications will demonstrate an electronic switching device for video and sound signals KTV, equipment for the synchronization accuracy tolerance control of radio stations AKSR, an automated phototelevision device for recording black-and-white images FTU, a stereotelevision device "Parallaks-1", a portable generator of color strips, and a measuring device for the parameters of television transmitters K2-36.

The "Radio Communication" section will show systems and equipment of the statewide communication service of the YeASS.

The largest section of the Soviet exhibit "Terminal Equipment, Channels and Communication Networks" will show the main technical facilities of the YeASS: digital and analog transmission systems, fiber optics communication systems, telephone, telegraph and facsimile equipment, switching equipment, electric power supply equipment, and computing equipment. In this section, the USSR Ministry of Communications will show the Technical Operation Center of a GTS [municipal telephone exchange] for 300-500 numbers a set of equipment for centralized control of coin-operated telephones at a GTS, a "Fonemofon" speech synthesizer, the "Otel'" equipment for settling accounts with hotels for long distance calls, equipment of the accurate hour's service ASV, time-division multiplexing equipment with delta-modulation for subscribers' lines of a GTS D-AVU, equipment for automatic processing and correction of the quality of telegraph messages "Interval", a telegraph multiple-call transmission control panel PTTs-TsKS-100, a telegraph operator's position of a terminal of the Message Switching Center OTsKS-T, color phototelegraphic equipment "Izotop", color digital phototelegraphic equipment TsFTA-Ts, a digital testing set for localizing failure and tuning digital signal processing equipment "Tsiklon", line equipment of the system K-1020S, duplex universal multichannel channel-forming equipment "Dumka", and a display-type telegraph terminal ELIT-T.

The Soviet display will also include antennas for radio relay communication lines, rectifying devices for power supply of large ATS [automatic telephone exchanges] intercity telephone stations, and other communication facilities, an integrated automatic telephone station "Istok" (IATS-KE), as well as measuring instruments. It will also include equipment developed by the enterprises of the USSR Ministry of Communications in conjunction with the Ministry of the Electronic Industry such as equipment sets of superhigh-frequency radio relay communication lines "Elektronika-svyaz'-ITs", "Elektronika-svyaz'-2", as well as a receiving space communication station "Moskva" which was developed jointly with the Ministry of the Communications Equipment Industry.

The "Postal Communications" section will show modern postal equipment, including a machine for automatic processing and stamping of mail, a device for detection of indexes, a machine for automatic sorting of mail by the sizes, a semiautomatic device for sorting printed matter. Visitors of the exhibit will see a model of the railroad post office in Kiev equipped with the latest equipment. There will be a large exhibit of Soviet postage stamps. A special postage stamp commemorating the exhibition is being issued, and stamps will be cancelled with a special commemorative stamp.

A special display will show the contributions of Soviet scientists into the world communications engineering. Ham radios and Soviet scientific and technical literature will be represented widely. In conclusion, there will be a slide film "Communication Facilities for Sports, Tourism, and Relaxation" which will be shown on several screens.

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PROBLEMS WITH RAILROAD LOUDSPEAKING SYSTEMS DISCUSSED

Moscow GUDOK in Russian 23 Jun 81 p 2

[Article by I. Lopatin, "Gudok" Correspondent, Tashkent]

[Text] The following letter was received at the correspondents' office of "Gudok" in Tashkent: "We, electricians of the Samarkand maintenance section, maintain loudspeaking communication systems at railroad stations. But due to the total absence of spare parts for loudspeakers 10GRD-5, we are in a desperate situation. During the last two years we did not receive a single movable system for these dynamic loudspeakers. Therefore, we have to get by without them and turn them off at some points. We know that this could lead to accidents with people working on the railroad tracks, but we do not see any other way out. According to the management of the material and technical supply services, the railroad gets only one percent of the required amount of spare parts for operating systems. How can a reliable loudspeaking communication service be ensured under these conditions?

Electricians V. Lipunov, A. Khaimov, T. Kasymov".

I showed this letter to the head of the Samarkand section, G. Kontarovich.

Grigoriy Isakovich Kontarovich said: "Everything here is true. We really have a bad situation with spare parts. As a result of this, about 100 loudspeakers are not working in our section. Last year we received only eight movable systems, which is a drop in the ocean."

I talked with the head of the department of STsB [signalization, centralization and block system] and communication of the Bukhara division, A. Latypov.

He complained: "We have a problem with spare radio parts. In order to provide radio communications for the most active sections, we have to remove dynamic loudspeakers from other less active sections. Up to 30 percent of devices are not working even at such stations as Bukhara-1, Samarkand, Tinchlik, Navoi, Bukhara-2, where shunting is done."

I went to the Central Asiatic Railroad Administration and obtained the following figures there: there were 1500 loudspeakers in the requisition for 1980. Only 96 were received. The same number was requisitioned for this year, but funds were approved only for 162 units and even those will be received only in the fourth quarter. The situation with movable systems is about the same.

Loudspeakers 10GRD-5 are intended for 12 hours of operation a day, but they operate practically around the clock. In order to prolong the service life of loudspeakers, communication workers lower the voltage in the network. As a result of this, they work longer, but the quality of transmission is impaired, which is also dangerous.

According to the norms of operational expenditures for radio tubes, semiconductor devices, parts and materials for maintaining radio devices of railroad transportation approved in October of 1966, it is required to have 1.75 systems a year per one point. In accordance with this, the railroad must have 4250 movable systems a year, but it has almost one twentieth of that number.

According to V. Garaburda, head of the radio communication sector, many existing norms have become outdated a long time ago and have to be revised. This applies not only to loudspeakers. It is already the third year that spare parts are not supplied for radio communications on trains and for train switching operations. It is particularly difficult with radio stations of the ZhR-3M-type which have been removed from production but will be used on the railroad for a few more years.

Portable radio sets for personnel engaged in making up trains has a normative service life of eight years, but their actual lifetime is no more than two years. It is not clear why the same service life is established for mobile and stationary radio sets when the conditions of their operation are entirely different!

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END

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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 178

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 178

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FIBER OPTIC COMMUNICATIONS BEING DEVELOPED

New Delhi PATRIOT in English 25 Jul 81 p 5

[Text]

The Indian institutes of technology are working on development of a new communication system that has long range civil and military applications, reports UNI.

The work has been undertaken under a Rs 11 lakh research and training project granted by the Defence Ministry, according to official sources in Delhi.

Known as the fibre optic communication, the system is described as the "futuristic communication technology" which has so far been tried only in the United States, Japan, the UK France and in a small way, in West Germany.

The sources said the system could be very efficiently used in battle tanks, fighter aircraft and ships besides inter and intra-city communication.

The fibre optic communication system uses hair-thin glass fibres for transmission. Laser beams are sent through these fibres, which act as a waveguide, and the beam is transmitted at a very low loss to long distances at exceptionally large bit rates or band width.

It is stated to be totally free from radio frequency or electro magnetic interference, besides being relatively immune to nuclear radiation and blasts. The normal communication system are totally ineffective during radiation.

As compared to coaxial and waveguide communication, fibre optic communication is considerably cheaper, particularly for long distances, like between two cities because it requires limited repeater stations.

The sources said IIT Kharagpur would work on development of fabrication and measurement of fibre optic, IIT, Kanpur on long haul system and IIT, Madras on designing the system.

INFORMATION MINISTER TELLS PLANS FOR ALL-INDIA RADIO

New Delhi PATRIOT in English 22 Jul 81 p 5

[Text]

All India Radio is to have an additional channel to relay programmes connected with national integration and unity according to Minister of Information and Broadcasting Vasant Sathe, reports UNI.

According to Mr Sathe, the channel will release time for radio stations to put out more regional programmes. It will eventually carry programmes to all parts of the country.

The national channel will have a 1,000 kilowatt medium wave transmitter at Nagpur which will be supported by a number of medium wave transmitters. When the scheme is implemented, the AIR listeners will have a choice of three channels—the local radio station, the regional radio station and the national channel.

The Ministry also proposes to make a beginning during the sixth five year Plan with local radio stations.

This is a new concept in radio and would involve larger community participation in programmes. Each station will cover an area within a radius of 25 kilometres.

The main thrust during the sixth Plan will be on consolidating the existing AIR services which are threatened with severe erosion because of the increasing intrusions from the transmitters of the neighbouring countries.

As it is, most of the AIR stations are not heard within the country or even within the State because of these intrusions. During the Plan period (1980-85) it is proposed to augment the power of the transmitters, set up new radio stations in uncovered pockets and provide an integrated shortwave service for the northeastern region.

Six new stations are to be set up at Tura (Meghalaya), Gangtok, Itanagar, Agra, Jamshedpur and Madurai.

It is also proposed to augment the external services so that the authentic voice of India is heard abroad. Six new power transmitters—four 200 shortwave transmitters at Aligarh and two 500 KW shortwave transmitters at Bangalore, are planned to be set up before 1985.

CSO: 5500

THIRTEEN EXPERIMENTS PLANNED UNDER 'APPLE' PROGRAM

New Delhi PATRIOT in English 24 Jul 81 p 5

[Text]

BANGALORE, July 23 (UNI) —Thirteen technical and social experiments are planned under the APPLE utilisation programme.

While nine of them would be technical experiments, the rest would be in the fields of communication, railway wagon movement monitoring and banking operations.

The technical experiments are: Time Division Multiple Access (TDMA): satellite access in time division mode permitting ultilisation of full power and band-width by each accessing station resulting in increased channel capacity and inheriting advantages of digital communication.

Spread Spectrum Multiple Access (ASSMA): provides secrecy and security of communications. Random access packet switching: useful for computer sharing reservation and such applications.

TV with multiple audio: useful for television transmission with multiple voice music that could be utilised for multilingual countries like India.

Fascimiles transmission: useful for transmitting pictures, texts and hand-written matters.

Network integration: facilitates direct dialling, STD destinations connected to the exchange via satellite circuit.

Digital communication multiple access: provides for good quality link offering inherent advantages of digital communication.

Small communication terminal: provides for emergency voice or teleprinter links for various applications.

Social experiments: television networking: many national events such as Independence Day, Republic Day, sports and games could be broadcast.

Satellite communication course: aimed at gaining experience in the use of a satellite network for university level education, and providing for visual teaching package.

Wagon racking for Indian railways: aimed at feeding wagon movement information from various intercharge points to centralised railway board computer at Delhi with minimum possible delay.

CSO: 5500

'APPLE' SEEN AS PROOF OF QUALITY OF INDIAN TECHNOLOGY

Bombay THE TIMES OF INDIA in English 17 Jul 81 pp 1, 13

[Text] With APPLE having entered today its assigned niche in the geosynchronous orbit 36,000 km. high over the equator at 102 east longitude, India has once again demonstrated proof of its emerging technological prowess. It has shown that it is able not only to build a satellite of complex hardware and configuration, but also put it in geostationary orbit and then nudge it along to a predetermined position.

Even if it is conceded that the initial booster power was provided by the European space agency's Ariane rocket, India's achievement is notable because only eight countries have accomplished this feat before. APPLE has thus taken India to a high technology orbit.

There is justifiable elation in scientific circles over this gigantic stride which they have a special reason to be proud of. Coming in the wake of the disastrous end of Rohini-II which burned up in the atmosphere just nine days after launching, APPLE imparts a trememdous boost to their shaken morale. It restores their confidence not only in themselves, but also in our young technology.

Tricky Business

The jamming of one of APPLE's two solar panels designed to power the satellites vital system is a matter of some anxiety, but there is optimism now that even with curtailed power most of the objectives of the mission, experimental primarily, can be realized.

Space launchings are a tricky business. Any of the millions of components in one of a number of systems can mess up things and scuttle the mission. Even the Soviet Union and the United States, with over two decades of experience and sophisticated technology they have, still face this element of gamble. Their performance in the early years of the space era was simply miserable.

Against this, India, with a negligible fraction of the immense resources at the disposal of these two giants, has shown a better record so far. APPLE is the latest example of this technological excellence.

APPLE is the fifth satellite project undertaken by India and the most complex to date. Naturally it gave some jittery moments to our space planners. The most crucial test of their capability came while moving the 670-kg satellite from the highly elongated transfer orbit in which the Ariane rocket and placed it on June 19, to a circular one. The operation called for meticulous timing and impeccable performance of the control and guidance systems. The APPLE apogee boost motor had to be fitted, for instance, for a precise period at exactly the moment when the satellite was at the extreme point in its elliptical orbit. Despite lack of experience, this job was done with enviable finesse.

The second critical task involved orientation of APPLE's solar panel to track the sun continuously while keeping its antenna pointed toward earth. With one solar panel out of commission, it was important that the only other power source was helped deliver its capacity of 140 watts for conducting various operations. But the asymmetry of the craft on account of the non-deployed solar panel made the job somewhat difficult. The problem resolved itself when an intricate momentum wheel was activated and APPLE was three-axis stabilised against roll, pitch and yaw. After these two difficult manoeuvres, raising of APPLE's orbit and reversing the satellite's eastward drift was rather simple. An array of 16 thrusters facilitated these minor adjustments.

Indigenous Effort

Most of the elements and systems needed for the mission were fabricated indigenously. For instance, the payload integration of the "C" band transponder (communications aid) was developed by the Space Applications Centre in Ahmedabad, while the honeycomb structure of the satellite was fabricated by the Nasik division of Hindustan Aeronautics Limited. The ISRO's satellite centre near Bangalore evolved, among other things, structural and thermal systems, power electronics and telemetry, tracking and command systems. The vital apogee boost motor, reaction control system and the momentum wheel for the three-axis stabilisation of the spacecraft were developed by the Vikram Sarabhai Space Centre in Trivandrum. Test and certification of reliability of these items alone will be a major desirable fallout from APPLE.

Interestingly, it is not widely known that some of the technological systems included in the APPLE payload for evaluation are so far advanced that they are not employed anywhere in the world as yet. The time division multiple access, for instance, is a new concept which may be of great practical importance to us. The system, which will help pack more signals into a single time division, will revolutionise the whole pattern of telephone traffic in the country before long.

Another major test planned is of the so-called digital communication system which holds great promise for the future. It offers, among other things, freedom from noise disturbances and enormous flexibility in handling different types of video, audio and data signals.

Similarly, the spread spectrum multiple access experiment will enable the country to evolve a communication technique which cannot be jammed or interfered with by outsiders.

The Indian Space Research Organisation and the post and telegraph department are also planning to test a small transportable communication terminal. If found suitable, it will provide two-way voice communication between any two remote parts of the country quickly and cheaply.

New Idea

The urgent need of these daring new concepts for India is at once obvious. It is a multilingual, sprawling country and the government is endeavoring to use satellite television particularly, and other satellite communication forms generally to inform, educate and entertain its people. But for economy reasons it wants to use a single multipurpose satellite in geostationary orbit for this plan.

While our space engineers are optimistic about using the new concepts in such a satellite with advantage, there are serious reservations among foreign experts about smooth workability and overall economy of such an approach.

The significance of APPLE lies here. With its antenna pointed to Nagpur in central India, it will give countrywide coverage and thus provide an opportunity to test the implications and limitations of the multipurpose satellite idea.

Data from this experiment will also be just in time to help us plan utilisation of INSAT-A, a versatile satellite, which will go into geostationary orbit over the Indian Ocean by the middle of next year.

INSAT-A is under construction to our specification by an American firm. It is meant to be used for national television and radio broadcast in one-step and also for close weather monitoring. Training of technical personnel needed to handle this satellite and its back-up, INSAT-B, and their ground support facilities is another major objective of APPLE.

According to ISRO, one of the early uses of the satellite is provision of an advanced satellite communication course to a group of ITT students. This programme will be directly telecast simultaneously in Bombay, Delhi, Madras and Kharagpur. A national hook-up on Independence Day to televise live the Prime Minister's address from Red Fort is also contemplated.

Only one thing, it seems, can upset these calculations: shortage of fuel and consequent premature demise of the satellite. A substantial part of the initial fuel charge has been used up in the tricky orbital maneuvers. So, only a fresh assessment can tell whether the current stock will see the APPLE through its projected life of two years. One estimate is that it may not last more than a year.

The solar power availability can also affect the functioning of the satellite. Though this view is contested officially, many experts feel that power from the single functioning solar panel--about 140 watts--will not be adequate for housekeeping as well as conducting various operations.

CSO: 5500

INSAT-1 SCHEDULED FOR LAUNCH ON 8 APR 1982

New Delhi PATRIOT in English 19 Jul 81 p 4

[Text]

BANGALORE, July 18 (UNI)—The Indian national satellite (INSAT-I) is tentatively scheduled to be launched on 8 April, 1982.

Work on INSAT, the successor to APPLE, is in full swing. The multipurpose communication-cum-weather satellite will be launched by the National Aeronautics and Space Administration (NASA) from Cape Canaveral, INSAT project directed P P Kale said.

The satellite is being built by the Ford Aerospace and Communications Corporations (USA). It will be positioned at 74 degrees east longitude.

Work on the master control facility (MCF) at Hassan to provide tracking and telemetry support to INSAT is progressing well. The installation of antennae would begin at MCF next month, Mr Kale said.

While APPLE would provide certain experimental capabilities in communications, INSAT would boost the country's telecommunications and weather monitoring systems.

It would facilitate nation-wide television and radio broadcasting, round-the-clock weather forecasting and long distance telephone connections even to remote areas. INSAT would thus mark the beginning of an era of bringing satellite communications technology to the doorstep of the commonman.

INSAT would have a seven-year life span as against one to two years for APPLE.

The Posts and Telegraphs Department is establishing 31 earth stations—28 fixed and three transportable—to utilise the INSAT communication capabilities.

Similarly, the Meteorological Department is setting up a meteorological data utilisation centre for processing INSAT data. There would be 110 data collection platforms over land and ocean and 20 secondary data collection centres.

Over 100 disaster warning centres are being set up in the coastal districts of the country for advance warning against adverse weather conditions.

BRIEFS

'APPLE' TDMA EXPERIMENT--The prestigious time division multiple axis (TDMA) experiment of the P and T aboard APPLE, the nation's first telecommunication satellite, was switched on for a trial run today by the IRSO scientists at the Space Application Centre (SAC) (Ahmedabad), a spokesman of the APPLE mission control at Sriharikota told PTI. The initial results were encouraging as the signals received at Ahmedabad were "strong and satisfactory," the spokesman said. He pointed out that simultaneously through "on orbit checkouts" the mission control ensured that the satellite's health was perfect. All the systems were found to be functioning well. The TDMA, where a single frequency is used by the P and T to transmit long-distance interference-free calls with much clarity, is now likely to be made fully operational in the next two days. The spokesman pointed out that as in the case of TDMA, SAC had fixed time slots for each of the six major and three minor experiments. For the next fortnight, experiments like random access package systems (RAPS) (for testing new computer technology) would undergo a trial run before becoming oerational. Meanwhile, one of the voice and TV channels was used by the Films Division and All India Radio at the Sriharikota APPLE mission centre to record some programmes. The IRSO tracking station at Bangalore was receiving signals from the satellite via the transportable terminal set up outside the tracking station, the spokesman said. [Text] [Bombay THE TIMES OF INDIA in English 25 Jul 81 p 9]

COLOR TELEVISION PLANS--New Delhi, July 21.--The Government has decided to adopt the Phase Alternation Line system for colour television in India. PAL is one of the three systems adopted by various countries for colour television. The other two are the Systeme Electronique Couleur Avec emoire and the National Television Systems Committee. The latter is so called because it was developed by the committee in the USA to work out a system which was compartible with black and white transmissions. Both PAL and SECAM are modifications of the NTSC system. Among the major countries the PAL system is in vogue in Britain and West Germany, while France and the Soviet Union have adopted the SECAM system. The Government has entrusted the task of covering the Asian Games in colour to Doordarshan. While the domestic telecasts will be in black and white, colour coverage will be made available to foreign TV organizations operating in colour. [Text] [Calcutta THE STATESMAN in English 22 Jul 81 p 9]

SATELLITE LINK FOR NORTHEAST --Shillong, Itanagar, Agartala, Kohima and Imphal will be linked by satellite communications system during 1982-83 general manager, telecommunication northeastern circle M P Ramaswamy said yesterday. Aizawl has already been linked by the system. Mr Ramaswamy told a press conference here that the work on the STD system between Gauhati and Calcutta was in very advanced stage. It would be introduced in Aizawl, Kohima and Dimapur shortly. Mr Ramaswamy said the 18 districts selected for rural telecommunication development included north Lakhimpur, Kohima, Tuensang and Mokohetung in the north eastern region. He said the P & T had approved the proposal for long distance public telephones through multi-access radio system at Agartala and Imphal. [Text] [New Delhi PATRIOT in English 21 Jul 81 p 4]

CSO: 5500

NANJING FIBER OPTIC COMMUNICATIONS LINE TESTED

Beijing DIANLI JISHU [ELECTRIC POWER] in Chinese No 4, 5 Apr 81 pp 34-36

[Article by the Communications Research Laboratory of the Nanjing Automation Institute: "Nanjing Fiber Optic Communications Test Line"]

[Text] I. General Situation

Fiber optic communications is a new type of communications method that has emerged in the field of communications. It has a large communications capacity, strong resistance against electromagnetic interference, small transmission loss, it is convenient to install, and it can save a large amount of ferrous metals. In recent years, it has been noticed by the advanced nations. According to reports, there are at least several hundred organizations in the world engaged in fiber optic communications. At present, fiber optic communications technology has already stepped out of the laboratory and has entered into the phase of comprehensive testing. There are over 100 fiber optic communications lines in the world now being tested and operated. Our nation's fiber optic communications research began relatively late but progress has been fast. At present, our nation's postal and telcommunications and railroad departments have established testing of fiber optic communications. Becuase optical fibers can insulate themselves from electromagnetism, the superiority of fiber optic communications is more visible in applications in electric power systems. Some nations have first applied fiber optic communications in electric power systems, and even wrapped fiber optic cables with electric power cables to transmit various kinds of control information.

To utilize fiber optic communications in our nation's electric power system, the Nanjing Automation Institute of the Ministry of Electric Power established a fiber optic communications staff at the end of 1977 and began to study the application of fiber optics in electric power systems. In November, 1978, the laboratory used a 20-meter optical fiber to transmit television images. In 1979, an optical terminal was developed for the fiber optic communications test line from the Nanjing Power Supply Bureau to the Midtown Transformer Staton and the technical problems of optical fiber coupling was solved. On 1 October of the same year, a 500-meter optical fiber was used in the laboratory to transmit television images and PCM pulse coded messages. In December, the laboratory again used a 1.8-kilometer optical cable to transmit analog television images and telephone communications. In January of 1980 under the cooperation of he Nanjing Power Supply Bureau, the first

fiber optic communications test line of the electric power system was established from the Nanjing Power Supply Bureau to the Midtown Transformer Station. It successfully transmitted dispatched telephone communications, telemechanic signals and television images.

This experimental line is 1.8 kilometers long, 600 meters of the line are supported on the same pole as a 10 kilovolt high voltage power line. The optical cable hangs on a fixed iron line and is strung along the iron line at varying distances in between with large gaps of 50 meters and small gaps of 30 meters. This is our nation's first suspended optical cable test line.

The Nanjing Power Supply Bureau was in charge of setting up this optical cable. Because the optical cable has fixed connections, therefore during installation, the positions of the fixed connections were determined first then the cable was installed from the center outward in two directions. To prevent too much pull on the optical cable, during installation, a guide pulley was hung on each pole and at corners. The weight of the optical cable was lighter than electrical cable, installation was convenient, and this optical cable was completely installed within one day.

The components used by this test line were all domestically produced. The optical cable was provided by the Shanghai Electrical Cable Institute and the Shanghai Xinhu Glass Plant. The emitting diode was provided by the Shanghai Metallurgical Institute of the Chinese Academy of Sciences and the 519 Plant of the Postal and Telecommunications Ministry. The PIN probe was provided by the 519 Plant of the Ministry of Posts and Telecommunications.

II. Major Performance Indicators

1. Transmission distance. A distance of 1.8 kilometers (consisting of two optical cables of 960 meters and 840 meters long connected by a fixed connection).

2. Optical cable. The optical cable has four core optical fibers, (multiple mode grdient type, diameter of 60/150 micrometers), one pair of power lines of 0.5 millimeter in diameter, one fortification core.

3. Optical cable loss

(1) The Shanghai Electrical Cable Institute measured the loss with a direct current lght signal through a bypass (stable condition) under a room temperature of +18° C, the values are listed in Table 1.

Table 1

光纤序号 1 / 光注入端 3 / 双 2 耗	1	2	3	4
A—B	3.27	3.07	2.87	4.12
B—A	2.97	3.6	3.13	4.81

注，A—B端是指光从960米段光缆通向840米段光缆。
4 B—A端是指光从840米段光缆通向960米段光缆。

Key:
1. Number of optical fiber
2. Loss
3. Light signal input end
4. Note: A-B refers to the light signal ente ing the 960-meter segment and traveling towards the 840-meter segment.
B-A refers to the light signal entering the 840-meter segment and traveling towards the 960-meter segment.

(2) The loss was used to test the line and then an LED light source was used to measure the loss without going through the bypass (unstable condition), the values are listed in Table 2.

Table 2

1 光纤序号	2 光注入端	3 直流光衰耗 (分贝/公里)	4 交流光衰耗 (分贝/公里)
1	A—B	8.33	4.44
2	B—A	8.33	4.44
3	A—B	5.27	4.22

5 注，4号光纤作为备用，没有测试。

Key:
1. Number of optical fiber
2. Light input end
3. Direct current light loss (decibel/kilometer)
4. Alternating current light loss (decibel/kilometer)
5. Note: No 4 optical fiber served as backup and was not tested.

4. Method of Regulation

Simulated signals were used directly for regulation.

5. Information Transmission

(1) A single channel black and white television image, frequency band width of 0 - 8 megahertz.

(2) Transmitting 250 baud telemechanically, there were remote test signals, remote communications signals and remote control signals.

(3) Transmitting carrier wave telephone communication, carrier wave frequency was 272 - 276 kilohertz and 352 - 356 kilohertz.

6. Optical terminal and electrical terminal interface

Input, output range: 1 $V_{peak - peak}$

Input, output impedance: 75 ohms (not balanced).

7. Optical output terminal

Light source: LED gallium arsenide diisomer luminous diode.

Optical wavelength: 0.83 micrometers.

Method of connection with the optical cable: There is a movable connector and there is also a fixed connection.

The power of alternating light of the output (including optical fiber output) light power transmission of television image was 39.8 microwatts (-14 milliwatt decibel), the power of alternating light for telephone transmission was 0.933 microwatt (-30.3 milliwatt decibel).

8. Light input terminal

Probe: PIN silicon photoelectric diode, photoelectric conversion efficiency of 0.4 microampere/microwatt, lowest receiving electrical potential of -38 milliwatt decibel, response rate $<$ 5 millimicroseconds.

Method of connection with the optical cable: Fixed connection.

Sensitivity of optical receiver: The power of alternating light for reception of television image was 0.31 microwatt (-35 milliwatt decibel), the power of alternating light for telemechanic reception of telephone communication was 0.11 microwatt (-39.23 milliwatt decibel).

9. Power source

Input voltage: -- 220 volts.

Output voltage: ±12 volts, ±6 volts.

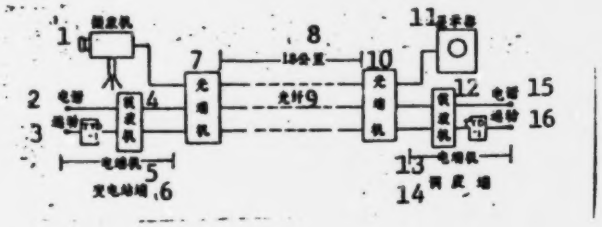
Power loss: about 5 watts.

III. Telemechanic Principles of Transmitting Television Images and Telephone Communications

The transmission system (see diagram below) of this fiber optic communications test line uses the analog type. The analog electrical signal directly regulates

the LED emitting diode tor photoelectric conversion into light signals. The advantage of this type of transmission of light waves through the light guiding fiber is that the equipment is simple and reliable, it can be conveniently connected to the presently available communications equipment of the electric power system (the communications equipment used in our nation's electric power system is mostly analog).

Illustration of the fiber optic communications transmission system



Key:

1. Camera
2. Telephone
3. Telemechanic device
4. Carrier wave generator
5. Electrical terminal
6. Transformer station terminal
7. Optical terminal
8. 1.8 kiloreters
9. Optical fiber
10. Optical terminal
11. Display screen
12. Carrier wave generator
13. Electrical terminal
14. Regulator terminal
15. Telephone
16. Telemechanic device

This test line transmits television images using a fixed focal distance and a single camera installed at the transformer station. A 19-inch color television is converted to serve as a display screen installed at the regulator terminal forming a monitoring system. It can monitor the operation of the high voltage switch the transformer and other equipment in the transformer station, and the personnel on duty in the main control room.

Transmission of telephone communications and telemechanic signals uses the ZZD-5 model electrically powered carrier wave generator, the TSY-2 model digital telemechanic device and the JYD-1 model sound frequency channel equipment connected all together forming a remote regulatory telephonic monitoring system with 20-point remote control, 28-point remote signaling, 28-point remote testing of signals.

In the entire fiber optic communications transmission system, the television image, the telephone and telemechanic transmission are transmitted via different optical fibers in a single optical cable One optical fiber transmits the television image signals, the second optical fiber transmits telephone and telemechanic signals. In this way, one optical fiber corresponds to one light source and one optical probe, therefore on the optical terminal at the transformer station are installed two light emission dishes and one light receiving dish. One is used to send television images, the other is used to send telephone and telemechanic signals. On the regulator terminal's optical terminal is installed a light emission dish and two light receiving dishes. The emitting dish is used to transmit telephone and telemechanic signals. The ZDD-5 model electrically powered carrier wave generator

can be used for repeated telemechanic transmission, the telephone and the telemechanic signals use the same optical fiber for transmission. Here, the ZDD-5 model electrically powered carrier wave generator must be changed to four high frequency lines to separate reception and transmission. Transmission to the opposite terminal is realized via the transmission brnach channel of the carrier wave generator through the alternator which is connected to the optical terminal's transmission dish by converting the electrical signal to a light signal and sending it into the optical fiber. The telephone and telemechanic light signals transmitted via the other optical fiber enter the light receiving dish of the optical terminal and the light signals of the telephone and telemechanic transmission are converted to electrical signals and sent to the signal receiving branch channel of the carrier wave generator, thus forming a channel for the transmission of telephone and telemechanic signals.

IV. Results of Establishing the Fiber Optic Communications Test Line

1. The fiber optic communications test line has transmitted television images and telephone and telemechanic information. The test results show that the television image is clear, the sound of telephone transmission is clear, and telemechanic signals are accurate and reliable. The dispatcher can view the main transformer in the Midtown transformer station directly on the television screen in the dispatcher room, the state of the switches and the personnel on duty. The results of using fiber optic communications to transmit regulatory commands and to carry out remote testing, remote signaling and remote control are good.

2. By testing the line, we proved that fiber optic communications can resist strong electromagnetic interference. This optical cable was set up on the same pole with a 10 kilovolt high voltage power line. The efficiency value of the power frequency sensitive voltage (cable - ground voltage) on the dynamic curve measured in the optical cable (ϕ 0.5 millimeter copper wire) was 16 volts while the fiber optic communications did not receive any interference.

3. Optical fibers are insulating materials, they are not affected by electromagnetic fields. Optical cables set up on the same pole with high voltage power lines can be directly installed into the dispatcher station and the transformer station or the carrier wave generator room of the power plant without the need for damping devices, coupled capacitors, connecting wave filters, and this saves investment and improves reliability of communications.

4. Through testing, we further grasped the variation of attenuation in the domestically produced optical equipment and optical cables. We discovered tha the output light power of the LED emitting diode dropped more, and using the same light power meter for measurements, we found that when the test line was first installed, the measured driving electrical current was 90 millamperes, the output light power was 49 microwatts, after half a year, the measured driving electrical current was 90 millamperes, the output light power was 37.5 microwatts. The attenuation in the optical cable of the test line varied minutely with changes in weather and temperature.

5. We also utilized the test line to perform the following tests:

(1) We used the error code rate tester to transmit AMI codes and HDB_3 codes of the PCM pulse code messages and measured an error code rate of less than 10^{-9}.

(2) We used two optical fibers connected together and successfully transmitted television images via 3.6 kilometers.

6. The test line shows the operation of the optical terminal is reliable, and operation is simple. At the time, the transformer station was undergoing expansion and construction was being carried out, there was a lot of dust, but the optical terminal could adapt to the relatively poor working environment, it was switched on and off frequently and it did not need readjustment and it could operate normally.

7. After completion of this fiber optic communications test line, many tentative ideas by communications workers of the electrical pwoer system have emerged: The use of fiber optic communications has a large capacity, the resistance to interference is strong, and installing optical cables on the same pole as power lines or on suspended ground power lines can solve the problem of transmitting telemechanic information from the transformer station and the communications center station (switchboard) and dispatching telephone calls into urban areas at once.

9296
CSO: 4008/416

RADIO HAVANA CUBA'S 20TH ANNIVERSARY MARKED

Aims, Objectives Reported

Havana CUBA INTERNACIONAL in Spanish Jun 81 pp 24-25, 27-29

[Article by Agenor Marti: "Radio Havana Cuba, A Window On the World"]

[Text] A little over 7 years ago foreign broadcast station Radio Havana Cuba, which has just marked its 20th anniversary, received a letter from Córdoba, Argentina. The writer said that "during the day I get my fill of capitalist propaganda while I ride on the bus, walk in the streets, read magazines, watch television or hear the radio, but at night I detoxicate myself by listening to Radio Havana Cuba." Further on in his letter he adds, "You are performing what is indeed a revolutionary task by spreading far and wide the truth regarding Cuba's revolution."

The writer's statement was accurate, and letters such as his come in by the thousands. They are received from all over the world. An overwhelming majority of them have something in common: they point out the highly important role performed by this radio station in revealing the truth and in exbounding ideological thought.

Radio Havana Cuba, which was officially established on 1 May 1961, has occupied a paramount place in reporting the real facts pertaining to international politics, history, economics, social affairs and cultural matters, and particularly those pertaining to Cuba's new realities and the situation in the Latin American countries.

That is why its popularity, as evidenced by the number of persons who listen, is constantly increasing and why the men and women who listen to its programs daily as a means of learning the truth regarding the achievements of Cuba's revolution and to gain knowledge of the history, culture and life of other nations, are counted by millions. Radio Havana Cuba does afford a window on the world, but, in doing so, enables one to view the world under a new light that makes it possible for the ideas and hopes of socialism to become part and parcel of the awareness and hopes of peoples who traditionally have been enslaved, such as those of Latin America.

The Mission of Informing

Radio Havana Cuba's work has been the object of public recognition extended even by the enemies of our revolution. From the outset, this international broadcasting station became a target of countless attacks and calumnies by imperialists and their puppet governments. Because it is a vehicle that makes it possible for ideas and information to reach all nations and also because it is a medium through which the truth regarding Cuba's revolution is made known and enables socialist thinking be brought to all oppressed peoples, it very soon was a target of attacks by the international bourgeois and imperialist press.

One year after Radio Havana Cuba was created, dictator Miguel Ydigoras told the ASSOCIATED PRESS that "Radio Havana Cuba is constantly calling for revolution against Guatemala." In September of that same year (1962)--barely a few weeks before the October crisis--UNITED PRESS INTERNATIONAL reported that "official U.S. circles learned that a way is being sought to offset the propaganda that stems daily from Radio Havana whereby the peoples of Latin America are encouraged to overthrow their governments and rid themselves of Yankee imperialism's yoke."

Precisely because it serves as an ideological weapon wielded by Cuba's revolution and because it urges oppressed peoples to shake off Yankee rule, defamatory campaigns were immediately launched against Radio Havana Cuba. However, also for that very reason, its prestige and popularity increased. The letters from its listeners prove this. Luis Fernández Sánchez, of Guayaquil, Ecuador, wrote: "A few days ago I listened to a wonderful speech made by Commander Fidel Castro on the occasion of the graduation of some dentists, and in it Cuba's Prime Minister explained what education means for Cuba. I congratulate you and ask you to continue beaming that type of program which makes the listeners realize the need for real social change in their countries."

And this happens to be precisely what the United States always tried to forestall--that men such as those we have mentioned (and they are infinite in number) be able to count on finding an unfailing way to a just life devoid of fears.

In October 1964 the MIAMI HERALD published a commentary which, with unwonted objectivity, stressed that "for most Haitians the only voice that clearly speaks up against the dictatorship that is perpetuating their misery comes from Havana. They gather nightly around whatever radio receiver is available--and many of them are small, cheap transistor radios--to listen to some fellow citizen who gives them sympathy in the face of the calvary they are suffering (...). The Haitian news blackout is complete save for a single gap--the communist radio broadcasts from Havana to which the population listens eagerly."

In 1969 the MIAMI HERALD published an item which stated that "The Rockefeller mission learned that throughout Central America and the Caribbean, Cuban radio propaganda is better than that broadcast by the Voice of America during peak hours." In his report to Nixon, Rockefeller said, "The Voice of America, which the United States broadcasts, should make its programs more attractive than those of Radio Havana," and added that "an earnest effort should be made to enable the Voice of America to at least compete with Radio Havana Cuba in Central America and

the Caribbean, including improvement of its programs and transmission over regular broadcast waves."

It thus turns out that from the outset Radio Havana Cuba began to fulfill its essential broadcasting function. On the occasion of the station's 15th anniversary, Isidoro Malmierca, a member of the Cuban Communist Party Central Committee, stated: that "Radio Havana Cuba's programs should endeavor not only to reply to the attacks made by the imperialists but, above all, to present our thinking and our stance, doing so in a creative and straightforward manner that will be understandable for the great mass of workers whom we reach." That man, who is now Cuba's Minister of Foreign Relations, emphasized on that occasion that "We are not and cannot be on the defensive but must, instead, take the offensive."

Radio Havana Cuba has in fact taken the offensive, as its programs also show. That station broadcasts each day 40 news programs and bulletins in Spanish, 16 in English, 11 in French, 8 in Portuguese, 4 in Creole, 4 in Quechua, 2 in Guarani, and 2 in Arabic, which makes a total of 87 news slots per day. Moreover, there are ach day 16 political and sports broadcasts in those 8 languages. The rest of the programs consist of cultural features, correspondence with listeners, and talks on ideological, philatelic and musical topics. The total number of programs on all those subjects braodcast by it each day comes to 137. Radio Havana Cuba beams daily a total of 66 hours of programs in the above-mentioned eight languages.

Some programs attain a tremendous following. One such is "Voces de la Revolución," which transmits segments of speeches by Commander in Chief Fidel Castro and other of the revolution's leaders. It is one of the programs with the most listeners. Then, too, there are "Frente a la agresión, Cuba responde," whose purpose is to refute the calumnies and intrigues launched against Cuba, and there are also, of course, the news programs and bulletins. Other programs that follow these in terms of the size of their audience are "Formalmente informal," "Nuestra América," "Cuba en los deportes," "Entrevistas," "Socialismo," "El Nuevo Mundo," "Filatelia," and other literary or musical nature ones. The programs are varied and entertaining and the news reports and bulletins reflect current international developments.

The station has been growing since May 1961 when it started to increase its transmitting power and thus, the scope of the geographical area it reaches. At the outset the programs were beamed only in Spanish to Latin America, but shortly thereafter broadcasts in other languages were undertaken, such as those in English for the United States, Canada and countries in the Caribbean, and those in Portuguese for Brazil. Later came the broadcasts in Guarani, beamed to Paraguay and Argentina, and in Quechua for Bolivia, Ecuador and Peru, as well as those in Creole for Haiti. Almost simultaneously, other transmitting facilities were given over to programs for Europe and Africa, using Spanish, English, French, Portuguese and Arabic. This means that, as is obvious, the message of Cuba's revolution is heard daily in much of the world.

Personal Communications

However, Radio Havana Cuba's activities are not limited to radio broadcasting. It has a department created especially to reply to every letter received. Incidentally, they number in the thousands each month. A team of editors who hold degrees in

philology, history, journalism, and Hispanic languages, replies to the expressions of concern, questions and requests that the station receives from all over the world. It should be pointed out that the enormous amount of correspondence has been received from more than 130 countries located in all five continents. Needless to say, many of those letters have entailed risking persecution, imprisonment and even death, since people in such countries as Paraguay, Bolivia and El Salvador write in to express their support of the Cuban revolution. Many listeners request information regarding certain features of Cuba's revolutionary struggle or regarding achievements which it has accomplished in recent years. Radio Havana Cuba answers them giving full details and sends them brochures and books which often have to travel a long distance before finally getting into the hands of the requester.

In addition, Radio Havana Cuba holds a yearly contest in which all its listeners can take part. The prize consists of five 2-week trips to Cuba, with all expenses paid.

More than 17,500 radio listeners have participated in the 16 contests which have been held from 1965 to 1980. Of them, 105 from 30 countries have won and visited Cuba.

So it is that the station's activities are not merely those of braodcasting but also include personal contacts with each listener which may be emotional and intimate. The most important thing about this is that it means communicating with the huge mass of men and women who see in Cuba's revolution and in the ideas of socialism--both of which they understand more fully because of Radio Havana Cuba's efforts--hopes for an improved and more just world.

To contribute to enlightening the conscience of those hundreds of millions of persons is and will continue to be the abiding task of Radio Havana Cuba.

PHOTO CAPTIONS

1. p 24. Baldomero Alvarez Rios has been a journalist since 1938 and is the founder of PRENSA LATINA and of Radio Havana Cuba, of which he is deputy general manager, a position he holds while being also deputy secretary general of the Union of Cuban Journalists (UPEC) and secretary general of the Latin American Journalists Federation (FELAP).

2. p 27. José Prado has been head of the editorial and information offices of the station and is now a deputy general manager. He completed his higher educational studies in journalism in 1954 but began to exercise that profession in 1959. He is a founder of PRENSA LATINA.

3. p 27. Orlando Castellanos, a journalist and radio commentator. A founder of Radio Havana Cuba, he has had long experience in braodcasting. He is the author of several highly popular programs, among them "Formalmente informal."

4. p 29. Miguel Angel de la Guardia, a bilingual journalist, has alternated over a period of many years his work in that capacity with that of being an announcer on several programs in English. He has also stood out as a commentator. He currently writes the program "PO Box 7026" for the broadcasts that are beamed in English. In 1981, he has received the National Vanguard of the Union of Culture award.

5. p 29. Angel Hernández, program manager and announcer. "Frente a la agresión, Cuba responde" is among the most popular programs entrusted to him. He is one of the station's founders.

6. p 29. Manolo Ortega. An announcer on various of the station's news and information programs, he is probably Cuba's most popular announcer.

Alfredo Viñas' Comments

Havana CUBA INTERNACIONAL in Spanish Jun 81 p 26

[Interview with Alfredo Viñas, director general of Radio Havana Cuba; date and place not given]

[Text] Alfredo Viñas, founder and director general of Radio Havana Cuba, has worked as a journalist for 26 years. He also is the founder of PRENSA LATINA and has been a deputy director of the newspaper GRANMA.

[Question] What was the purpose in founding Radio Havana Cuba?

[Answer] Nothing frightens the forces of reaction, the exploiters and the other enemies of the people more than the emergence of a real popular revolution which affirms from its outset, as ours did, that it will root out the evils keeping our country from free and sovereign development as an independent nation and that, moreover, it will go to any extreme to establish true social justice. That is why when the heroic guerrilla movement began to inflict sizeable defeats on the army that the imperialists had created and organized as a means of protecting their interests in Cuba, the information and propaganda machine of the reactionaries was immediately set in motion to spread all kinds of lies, calumnies and distortions regarding the process that would soon bring about our land's real emancipation.

Examples of the defamatory campaign waged were the stories regarding the composition of the expeditionary forces that embarked on the "Granma," who were described by more than a few of the reactionary press organs ad adventurers and mercenary fighters who were bound to fail, the repeated lies about Cuba's revolutionary leaders having been killed or taken prisoner, and, in general, the veil of silence that was used to conceal how the struggle in Cuba's mountains was really coming along. When Radio Rebelde started to broadcast daily from those very mountains the truth regarding the course of the battles and to reaffirm the goals sought by the Cuban people, dangerous cracks began to appear in that wall of silence which the imperialist news monopolies had raised against the Cuban people who had revolted. When the revolution again succeeded and it became obvious that, for the first time in their history, the people of Cuba had achieved political power and

were exercising it forefully to defend their legitimate interests, a massive defamatory offensive was started against our country that would make it easier for the then all-powerful imperialist leader to attempt a new armed intervention in Cuba. The quick response given by our revolution's leaders--which took the form of what came to be known as "Operation Truth" and brought together in Havana hundreds of newsmen among whom were many sent by press organs that were progressive--inflicted a costly defeat upon the persons who were counting on crushing the Cuban revolution easily. Fidel's actions in that unforgettable episode caused the true facts regarding not only Cuba but also regarding all of Latin America and other oppressed peoples, to resound as the cracking of a whip against the face of U.S. imperialism.

But the propagandistic maneuvers against the Cuban revolution did not stop there. Using their immense material resources, the imperialists imposed upon the Cuban people the economic blockade which aimed to weaken them into inanition, and they reinforced their blockade with a news and cultural one that was as fully a criminal deed as the other one. They sought to isolate Cuba and render invisible the example it was setting, while they went ahead at full speed reinforcing their negative propaganda through radio broadcasts and an avalanche of publications they have at their disposal on this and other continents.

This further propaganda offensive was solely for the purpose of bringing about a favorable psychological atmosphere in which to launch the Playa Giron military operation against Cuba. It was precisely at that moment that Cuba's first international station beamed its initial broadcast, doing so on a trial basis and under the name of Onda Corta Experimental.

The station's first programs were broadcast to Central America by means of a small transmitter. They were only in Spanish and were not sent out any great distance, but they were already bearing the message of encouragement from a country which had been the first one to win real independence. The broadcast station, which later was named Radio Havana Cuba, was in operation when the mercenaries landed at Playa Giron, and it denounced to the world the cowardly aggression the imperialists had perpetrated; it reported the true manner in which the military action took place and was able to proclaim that the invasion had been crushed in less than 72 hours.

From that instant on, the vibrant strains of the 26 July March that identifies our broadcasts has announced to millions of listeners Cuba's message of revolution and solidarity.

Radio Havana Cuba proved itself a powerful instrument of political and ideological warfare with which to face up to the antirevolutionary campaigns, making it possible to let the world know of the success achieved by our revolution and to provide encouragement and support to those who fight in other lands to thwart colonialism, neocolonialism and imperialism. This was the purpose of founding Radio Havana Cuba.

The U.S. imperialists are now posing before the world even greater threats against the peace and security of nations. They unleash their lightning and thunder

against the peoples who want to shake off centuries of misery and backwardness, and also against the socialist countries, all of whom need peace to build their new world. In this attempt the imperialists have discarded their human rights mask and seek to apply trigger law as a means of safeguarding their neocolonial preserves in Latin America and the rest of the world.

Having shed their human rights campaign, the imperialists have now launched an even more hypocritical campaign. The worst territories in history are feigning to be standard bearers in the struggle against international terrorism, unmindful of the fact that people can never forget the crimes committed by the CIA, which is an organization that has long used poisons, lead and dynamite in its sordid efforts in behalf of imperialistic interests.

Given that grave situation, Radio Havana Cuba has denounced in no uncertain terms the dangerous turn of imperialist policy and has added its voice to the growing wave of indignation and protest--a wave in which even the progressive elements among the people of the United States take part--against those new attempts at pushing the world to the brink of war.

Radio Havana Cuba reveals also the world's solidarity with the working people of the United States, who will have to bear upon their shoulders the weight of the economic restrictions that will be brought about by the armaments race and the policy of making it easier for the monopolies to accomplish their predatory aims.

[Question] What tasks lie ahead from here on?

[Answer] Radio Havana Cuba has made tireless efforts in these 20 years to secure the best possible quality. We intend to continue those efforts without any letup so as to fulfill fittingly the missions and tasks assigned to us by our revolutionary party and government.

As for the programs themselves, we are currently studying several projects covering new areas of general interest aimed at a better and wider contact with the international radio public.

In line with the responsible and demanding efforts they bring to bear in all that they have to do, Radio Havana Cuba's workers will continue to be, as in the past, the surest guarantee that this voice of Cuba's revolution will not flinch from accomplishing its role in the manner required by the great undertaking of which it is a reflection.

PHOTO CAPTION

p 26. Alfredo Viñas, director general of Radio Havana Cuba

Opinions, Music, Programs

Havana CUBA INTERNACIONAL in Spanish Jun 81 p 29

[Text] Opinions on Radio Havana Cuba

Statement by Salvador Cayetano Carpio, a member of the Joint Revolutionary Directorate of the Farabundo Marti National Liberation Front of El Salvador:

Radio Havana Cuba contains the message of hope for a better and secure future for all oppressed peoples. I have been really thrilled by the fact that even in the farthest reaches of my country people wait to hear on their small radios, during dawn hours, the message from Radio Havana.

Statement by Rafael Cancel Miranda, a Puerto Rican patriot:

During the 25 years in which I was held prisoner, Radio Havana Cuba was one of the things that helped me the most to keep in touch with Latin American reality, including that of Puerto Rico, as I heard via Radio Havana Cuba more things on Puerto Rico than could be heard on U.S. radio. In that sense, I am thankful to Radio Havana Cuba for having helped me leave prison knowing, to a greater or lesser degree, certain true facts of which I would have never had knowledge were it not for having listened to Radio Havana.

Statement by Carlos Mejia Godoy, a Nicaraguan musical composer and performer:

During the dark, opprobious years of the dictatorship, this radio station provided us with encouragement to carry on our work and spurred us on to improve that work, making us into a single whole and joining us deeply to Latin America's struggle.

Music From All Over the World

One of the successful accomplishments of this radio station is its musical broadcasts because Radio Havana Cuba has a very considerable amount of music which includes most of the Cuban music recorded both before and after 1959, besides a valuable collection--that is systematically added to--of the best and most current Latin American compositions, as well as the most important international ones.

Insofar as Cuban music alone is concerned, for instance, Radio Havana Cuba keeps and broadcasts all the songs of the Matamoros Trio, Sindo Garay and Rita Montaner, as well as the compositions by Amadeo Roldán, Alejandro Garcia Caturia and more recently those played by the Aragón Orchestra, Benny Moré and Leo Brouwer, to mention just a few composers and interpreters.

The number of Latin American pieces, which are also part of Radio Havana Cuba's collection of phonograph recordings, is growing thanks to the fact that the listeners on our continent send in recordings from their countries. Radio Havana Cuba's valuable collection enables its listeners to enjoy the most current music as well as the traditional compositions of all lands.

Radio Havana Cuba at Sea

Among Radio Havana Cuba's varied programs, those which it beams to Cubans who work at sea are deserving of special mention. Those programs are presented in the slot "Cuba por los mares del mundo," which is intended for Cuban merchant marine and fishermen operating on the high seas or on the continental shelf. Consisting of music, general comments and interviews with families of seamen and fishermen, "Cuba por los mares del mundo" has been gaining in prestige and popularity. This has been so much so, that Radio Havana Cuba receives a great number of letters and cablegrams referring to that program. The seamen and fishermen themselves often write in to request whatever subjects and musical pieces they wish to hear. Of course, the station heeds their requests.

9870
CSO: 5500/2271

BRIEFS

SECOND TV CHANNEL--The Jamaica Broadcasting Corporation is to introduce a second television programme channel which will utilize mainly local art. Prime Minister Edward Seaga, speaking yesterday at the opening of the Festival Fine Arts Exhibition at the Upstairs/Downstairs Gallery, Harbour Street, Kingston, said that the new channel was part of a new communications media programme being planned by the Government. JBC-television currently uses one programme channel although these programmes are carried by more than one channel on the television sets. Mr. Seaga said that although he was not in a position to give details of the communications media programme, he could say that several new experiences would be introduced into the public media using a great deal of local talent. [Excerpt] [Kingston THE DAILY GLEANER in English 27 Jul 81 p 1]

CSO: 5500/7543

FUTURE PLANS FOR NATIONAL POSTS AND COMMUNICATIONS OFFICE

Brazzaville MWETI in French 7 Jul 81 pp 3, 7

[Article by Mayouma Mbaloula]

[Excerpts] The future plan will give prominence to the telecommunications sector. On a national level, it is already known that the government is preparing to improve the telephone network and to provide the whole country with an efficient telephone system. On an international level, the Congolese telecommunications service is being overhauled to start operating with a new Intelsat V. This work started on 17 June and was completed on Friday, 3 July. The old Intelsat IV could no longer meet the customers' growing demands. The new satellite--which hovers at an altitutde of 36 kms off the coast between Cameroon and Nigeria--offers many possibilities.

The National Posts and Telecommunications Office [ONPT] was created by Law No 9/64 of 25 June 1964 after the former Equatorial Posts and Telecommmunications Office was dismantled, and has a monopoly over the management of posts and telecommunications in the People's Republic of the Congo.

Traffic to foreign countries is carried out by radio link (Brazzaville-Kinshasa), by satellite (Moungouni land station) and by decametric waves.

Short and Medium Term Objectives

The changing patterns of the Congolese communications network are aimed at satisfying ever more the needs of customers who are becoming increasingly demanding and this will be achieved with an increase of the total number of telephone exchanges, of national and international long-distance circuits and by ensuring rapid transmission, good quality of reproduction and diversification of means of transmission.

Despite the efforts made by the ONPT in recent years, most of the domestic telecommunications network remains to be modernized or even built.

During the coming years, the ONPT will acquire:

--an international telephone exchange (CIT), for which equipment is being built, that will introduce direct dialling for a number of international telephone circuits.

--an international telegraph exchange (CTI), for which invitation to tenders has been issued, due to play a similar role to that of the international telephone exchange.

--a Brazzaville-Pointe Noire radio link of large capacity to carry television and sound programs to the soutwest of the country.

The expansion of the nothern radio link is under study and will provide television and telephone serves to Djambala, Lekana, Oyo, Abala, Boundji, Gamboma, Makoua and Mossaka.

Future Trends

1) The chief objectives in the sphere of telecommmunications for this decade and in the future ones are, among others, to make the public facilities serving the national territory increasingly competitive, to diversify the means of transmissions so as to make the system more foolproof and make the telephone available to everybody.

2) The ONPT still needs to solve many problems in the sphere of telecommunications. Despite all the efforts made by the ONPT, its means remain very limited considering all that needs to be done. To coordinate these tasks, the office requires a development plan for the telecommunications sector to establish an order of priorities in the steps which must be taken in the various spheres all over the country and to decide how and when these steps should be taken. While the usefulness of planning no longer needs to be demonstrated, it has become an essential tool for the management of any enterprise which wants to make progress and be efficient.

The absence of planning inevitably leads to improvisation which often results in a dead end and in a waste of means.

3) To be up-to-date with the technological and scientific advances in the field of telecommunications, the ONPT will start introducing into the Congolose vocabulary words such as "telematics" and "new services" and one will speak about the "telematisation" of society.

Telematics, born when telecommunications and data processing were brought together, has introduced a complete change in the telephone system and produced many means of communication.

It not only offers subscribers a touchtone telephone and a television receiver of new services which does not require a computer, but, even better, it brings a computer within the reach of the subscribers.

The new services planned are teleprinting, teleconference, video text, telealarm, teletex, telefax and so on. All of them allow data to circulate faster than people and allow people to be in contact with one another in all kinds of ways and from a distance, and they save people from having to make long, tiring and costly trips.

The future prospects of the Congolese economy make it impossible to disregard telematics because many of the new services it offers will help to simplify our daily life in this modern world.

The use of more sophisticated services offered by telematics requires, among other things, that the telephone be available to all and that the network goes to a dialing system.

8796
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TELECOMMUNICATIONS PROJECTS REVIEWED

Backlogged Demand for Telephones

Lagos BUSINESS TIMES in English 3 Aug 81 p 1

[Article by Stanley Egbochuku]

[Text]

THE Post and Telecommunications (P&T) can no longer give new telephone lines to any interested person who lives at Ikoyi, Ebute Metta, Ikeja, Amuwo Odofin, Lagos Island and some parts of Surulere in Lagos State.

The reason is that the exchange capacities in those areas have been stretched to the maximum.

The Permanent Secretary, Federal Ministry of Communication, Mr. J.E.K. Oyegun, explained that Ikoyi and Ikeja had 7,000 new lines each, all of which have been taken up. Ebute Metta has 4,000 lines and Lagos Central 5,000. He said that the P&T would be allocating 5,000 additional lines to Lagos Central. It means that new subscribers would be added on in the area as soon as the project is completed.

There is hope also for those who live around Amuwo Odofin. Mr. Oyegun said that the proper exchange for the area was being built and could take additional 1,000 subscribers. A proper exchange is also being built in Isolo. It will be completed early in 1983 and would provide additional 5,000 lines.

Victoria Island has additional 10,000 lines and over 5,000 have now been taken. Victoria Island, therefore, is the only area where the P&T can easily put on new subscribers.

There is a very high demand for telephone lines all over the country. The P&T cannot really estimate the volume of the demand and so cannot relate the level of supply with the demand.

It cannot equally promise an immediate improvement in the supply situation. 'Everything depends on funds'; said Mr. Oyegun.

The Ministry of Communication has still not recovered from its hopeless financial position which forced it in 1978 to limit its efforts only to consumating the projects for which contracts have been signed. It has had to abandon the Telephone Exchange Contingency Plan launched in 1975 which provided for phases 1, 2A, 2B and 2C of which the implementation would have resulted in the provision of 480,144 telephone lines throughout the country.

The Third National Development Plan had envisaged the possible expansion to 750,000 telephone lines by 1980. The P&T has only been able to put on between 40-50,000 subscribers since 1978.

The existing step-by-step, cross-bar 5,005 and NECO exchanges can no longer be expanded. Their expansion would have provided an additional 31,300 lines. The P&T plans to convert them to 'talk the same language' with the R2 being installed.

There was a maintenance contract signed with Plessey Nigeria Limited which provided for the refurbishing of Iporin 'A' and Ikeja 'A' crossbar 5,005 exchanges. The General Electric Company's contract for the extension of eight step-by-step exchanges has since been completed.

One major development which satisfies Mr. Oyegun is the completion of the Coaxial Cable System. It is one of the systems that would diversify the transmission systems and provide alternative route for transmission of messages to the existing terrestrial micro system.

The implication of the new system to the National Telecommunication programme is that the Lagos to Kaduna stretch will become more reliable and it could be possible to carry on 960 simultaneous - conversations as against the present 12 to 24. Our existing single channel system provides that once there is a fault, it will affect the whole lines.

The most common problem is associated with power supplies as the P&T in most cases, generates its own power. The cost of electricity generation is so high that chances of profitability is remote.

There would be a total of 223 telephone exchanges including mobile exchanges in due course.

Telecommunications Projects, Contractors

Lagos BUSINESS TIMES in English 3 Aug 81 p 32

[Article by Stanley Egbochukwu]

[Text]

THE Federal Ministry of Communications has so far paid out a total of N1.74 billion for over 100 major telecommunication projects currently being extended throughout the country. This amount represents 60 per cent of the present values of the various contracts.

For instance, N4.96 million has been paid out to ITT for the N37.68 million project which provides for the design, supply, installation and testing for the Ibadan Central, Ado Ekiti and Akure exchange areas.

Similarly, Siemens has only received N1.88 million out of the N16.73 million contract for the provision of 7,350 additional lines to the National Telex/Gentex Network.

The project has actually not started but the programme of action is being drawn up and the shipment of material awaiting the opening of Form M.

A total of N200.4 million has been paid out also to the ITT COSMAC/L.M. Ericsson for the installation of switching equipments in the 40 locations designed to be the infrastructural exchanges which are advanced for early implementation of the Telecommunications Third National Development Plan (1975/80).

In this contract, the ITT has been manning Lagos, Ibadan, Benin, Kaduna and Bauchi zones, while COSMAC/L.M. Ericsson cover exchanges in Enugu zones.

Marubeni won the contract for the provision of Mobil Exchanges in the country in March 1975. The present value of the contract is N11.18 million and about N10.3 million has been expended on the project.

The contractor has delivered all the 29 units, nine of which have been commissioned and two more accepted. One exchange was commissioned in Akure to fill the time until the ITT exchange is ready for cutover.

The major problem in this project is that neither transmission links nor external line plants have been installed in the locations where the exchanges were originally intended for.

Six contractors were involved in the contracts for cable expansion and replacement in the Lagos area which was awarded between May, 1975 and September, 1976.

They were Lagoe Solomon and Solomon, Dave Engineering, Graham Bell, TCL and NOSSEC/FUJIKURA.

The present value of the contracts adds up to N48.38 million. Only N41.32 million has been spent so far. Again, about N41.3 million has so far been spent on the project for the supply and installation of primary, secondary and junction cables in Lagos area.

This project was shared amongst six contractors namely; Fujikura, Graham Bell, NOSSEC, SIEMENS, Kabel Metal and Protec Sobrotel.

Siemens also won a contract for the provision of telephone exchange at Isolo and the extension of Lagos 'D' exchange.

Only N2.5 million has been spent on the project which is currently valued at N19.51 million.

The P&T owes 13 contracters a total of N16.34 million being the total payments still outstanding for the completed projects. The sum is the difference between the total amount spent on the various completed projects and the present value.

The present value of the contracts total N97.87 million. The amount already spent adds up to N81.53 million.

Some of the projects in this category are the building of an exchange for Victoria Island, the installation of an external line plant in Ikeja airport, the extension of eight step-by-step exchanges and consultancy services.

Six projects have been completed. The total amount spent was N25.7 million. The projects include the supply of coin telephone instrument and accessories, rehabilitation of external line plant and supply of PABX. There is also the extension of Ikeja and Mainland exchanges, supply of telecommunication material and supply of copper wire.

Out of the 37 locations assigned to the ITT since March 1975 when the contract was awarded, 24 have been commissioned and the rest held up because of the delays caused by the building projects and lack of NEPA supplies at the sites.

The locations already commissioned include Lagos-Apapa, Lagos Central, Ebute-Metta, Ikeja, Ikeyi and Iponri. Others are Abeokuta, Ado Ekiti, Ibadan, Ijebu Ode, Ilaro, Ogbomosho, Okitipupa, Ondo, Owo Shagamu, Agbor, Benin, Lokoja, Sapele and Warri.

Kaduna and Jos locations have also been commissioned.

The seven exchanges involved in the 12 locations assigned to COSMAC have been commissioned. The contractor is currently working on the switching equipment installation in Aba and Calabar.

When that is completed, the company may be paid an additional N3.3 million having already received N13.04 million.

This contract was supposed to have been completed in March 1977. L. M. Ericsson is equally behind schedule in the completion of its two related projects valued at N20.19 million.

In the New Enugu Local Telephone Exchange, the acceptance testing has since been completed and the inter face equipment installation to Plessey 5005 is 56 per cent complete.

CSO: 5500/5064

FURTHER DETAILS OF BLACK TV PROGRAMMING GIVEN

Johannesburg THE CITIZEN in English 14 Aug 81 p 17

[Text]

THE countdown to the launching in 1982 of TV2 and TV3 has started.

It became apparent yesterday at a Press preview of Black television programmes that TV2 and TV3 will not be supplementary, nor inferior to TV1.

Both services, said the SABC, were intended to be fully fledged to serve and entertain definite groups of people.

Independent

From the outset the new television service will be beamed to about four million potential viewers on the Reef, in Pretoria, Vereeniging, the Durban area and Port Elizabeth. It will be extended by the end of 1982 to reach approximately seven-million people.

TV2 (which will serve the Nguni people — Zulu and Xhosa) and TV3 (the Sotho service) will, as soon as manpower and finance permit, be separated to form independent channels.

Programmes will alternate. TV2 and TV3 will initially each have 90 minutes of viewing on weekdays and 180 minutes during weekends. The total viewing time for the two services will be 27 hours a week. Both services will be commercial from the outset, with an advertising content of eight percent.

Large Staff

About 400 people have been appointed for TV2 and TV3, but they will eventually need 1 000 employees.

The launching of the new service involves more than R100-million. Of this R70-million will go for capital expenditure, and about R35-million as establishment cost.

Broadcasting Centre in Commissioner Street, Johannesburg, will be the headquarters for TV2 and TV3. The first programme personnel are expected to move into their offices from mid-October this year, while the first production studio at Broadcasting Centre will be in operation from the end of October.

Some programme personnel have already moved into Broadcasting Centre in Weavind Park, Pretoria, and their first production studio will be ready by the end of this year. Dubbing facilities will be ready towards the end of 1982.

Four camera outside broadcasting units have been dispatched to Durban and Port Elizabeth, and Black personnel are undergoing training to man these vehicles.

Research on the introduction of TV2 and TV3 has been done with the utmost care and they will deliver a quality service.

CSO: 5500/5065

BRIEFS

DAR ES SALAAM-MONTREAL PHONE LINK--A telephone route between Dar es Salaam and Montreal, Canada, with three channels, was successfully commissioned at 1245 Greenwich Mean Time (GMT) on July 21, this year, the Tanzania Posts and Telecommunications Corporation (TPTC) announced yesterday. A statement issued in Dar es Salaam said that the circuits are routed through Nairobi on a "hardpatched" basis. Arrangements are also underway to open a fourth channel in the very near future, the statement added. "This is expected to provide greater and efficient telephone service to our customers to and from the northern American subcontinent," the statement said. [Excerpt] [Dar es Salaam DAILY NEWS in English 30 Jul 81 p 3]

CSO: 5500/5064

NEW CONSTITUTIONAL AMENDMENT PLANNED ON RADIO, TV

Zurich NEUE ZUERCHER ZEITUNG in German 19/20 Jul 81 pp 15,16

[Article by U.M.: "Foundation for a Radio Law in Switzerland"]

[Text] Bern, 17 Jul--In a new constitutional amendment 55bis, which is succinctly formulated in general terms, the Federal Government intends to provide itself with the necessary legal base on which to establish a Swiss law concerning radio. Basically the proposal to amend the constitution clarifies legislation affecting radio and television as well as other forms of public communications-based dissemination of programs and information which are in the interest of the Federal Government. Radio and television are supposed to contribute to cultural development, to the formation of opinions and to entertainment, consider the special characteristics of the country and, in an appropriate manner, provide expression for the large variety of events and views. The independence of radio and television and also the freedom to develop programs are guaranteed within the framework of these provisions. The announcement by the Federal Council, which was made public on Friday, for the attention of the Swiss councils, provides a detailed explanation and justification of the wording which was publicized in the beginning of June and the material provisions of the proposed addition to the constitution; moreover, it describes in great detail the development and present situation in the sector of electronic media. An abundance of detailed information and fairly theoretical thought associations does, of course, come at the expense of a clearly formulated government intent.

To Date Only Technical Authority

According to the majority interpretation of the law to date the Federal Government, on the basis of Article 36, Section 1 of the constitution, has the authority to control the technical interests of radio and television, and in the opinion of the Federal Council this communications sovereignty would even extend to activities in space in case anyone wanted to put a satellite radio into operation. On the basis of the telegraph and telephone law, the Federal Government can also involve third parties in its sovereignty and issue licenses. But there are no explicit constitutional and legal provisions which, from the point of view of the state and media policy, specify the conditions for issuing licenses. Thus, this concerns regulations about programming, financing, the organization of the broadcasters and the position of the users. Uncertainty and insecurity also mark the complex relationship between state and broadcasters; problems occur primarily with respect to

control. The legal position gives the authorities a certain amount of discretion which is subject to only a few guidelines and restrictions.

New Transmitters--New Media

It is quite difficult to make this situation compatible with the principle of legality. In addition, there is the fact that radio and television are today unmistakably of great importance for the state, society and the individual. In the past 25 years the number of radio receiving licenses increased from 1.23 to 2.24 million, and the number of television receiving licenses went from 10,507 to 1.97 million. The Swiss Radio and Television Association (SRG)--until today the only institution which is permitted to transmit radio and TV programs throughout Switzerland on a continuous basis--in the past 10 years has developed from a medium-sized operation with approximately 1,000 staff workers into a larger enterprise with about 3,300 employees. In addition to the 5 medium-wave transmitters, today there are also available 202 VHF transmitters at 97 locations. New forms of telecommunication, such as cable and satellite TV, display text and two-way communication likewise raise the question of constitutional inclusion.

Comprehensive Scope of Application

The proposed constitutional amendment should give the Federal Government the authority to control the problems which arise in connection with radio and television and to establish binding regulations, for example, on defining the concept, the right of access to the programs, freedom in respect to radio and television, the rights of the listeners and viewers, the rights and duties of those creating the programs, and the financing and organization of the broadcasters. In this respect it distinguishes between radio and television on the one hand and "other forms of communications-based dissemination" on the other hand. The Federal Council does not thus intend to explicitly control via the constitution everything that uses electronic transmission, but rather to guarantee itself the authority to be in a position to deal with future developments in this sector as needed with legislation.

As far as the performances of the media and the manner in which they accomplish them are concerned, a democratic state cannot restrict this spectrum and cannot attempt to substantially control the political process. Nonetheless, the constitutional amendment is supposed to charge radio and television with accomplishing specific achievements and these are summarized under the concepts on the one hand of the formation of individual opinions, of cultural development and entertainment, and on the other hand, of the consideration of the special charactrristics of the country. A suitable presentation of the variety of events and views would, as the Federal Council states in its announcement, be in line with our pluralistic society and our kind of state, which in its diversity must repeatedly reaffirm its unity.

No SRG Monopoly

The constitutional amendment specifically does not provide for an SRG monopoly; rather, several broadcasters can become involved in this task. The broadcasters would, however, have to be independent both of the state and of nonstate groups. A state-controlled or directed radio is thus excluded. Conversely, however, the

state is at the same time supposed to be the guarantor of the fact that the broadcasters could not be unilaterally influenced by certain political, economic or cultural interests. At the constitutional level, however, there is no intention of issuing regulations on the organization of radio and TV broadcasters. This will be the job of legislation which also includes the control of responsibility and the internal development of program freedom. In this, it must expressly set forth the fact that a broadcaster has the duty of controlling, according to the sense of the constitution, the rights and duties associated with the activity of those responsible for the programs, for example by editorial statutes or internal directions.

In respect to the question of financing various radio systems the announcement insists that complete decontrol of advertising is out of the question. Thus, once again in the implementing legislation there will by necessity be restrictions on advertising which relate to time and objectivity, possibly even to locale.

Independent Court of Appeals

Finally, the draft of a radio and television amendment provides for the creation of an independent court of appeals. It would be independent both in respect to function and personnel, that is, to a certain degree a judicial organ not under the control of parliament and the Federal Council. On the level of law, its powers likewise require even closer control. It is still to be determined in particular whether this committee is to be accorded only a power of determination, or whether it can render judgments with sanctions. The Federal Council has not committed itself in this matter. Important for it, however, is the fact that within the meaning of a uniform application of the law, the decision of a court of appeals could be contested and if need be could be taken to the Federal Supreme Courts. In the opinion of the Federal Council the program grievance should also be introduced as a new legal remedy; this would be available to agencies, units and individual persons. Yet formal criteria must be established which would have to be fulfilled so that a grievance is in fact handled and the court of appeals is not overwhelmed with such petitions.

Vague Suggestions For Legislation

A government commission of experts is presently still at work on an overall media conception. Among other things, it is charged with developing a law for radio and television. The Federal Council does not want to anticipate this work. The direction to be taken in the implementing legislation is therefore only vaguely suggested in the announcement concerning the radio and TV amendment. For pressing practical reasons, namely in respect to the new technologies--especially cable radio--the constitutional amendment would nevertheless have to be dealt with prior to the overall media conception.

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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 179

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 179

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WEATHER FORECASTING SYSTEM BEING MODERNIZED

Dacca THE BANGLADESH TIMES in English 14 Jul 81 pp 1, 8

[Text] The United Nations Development Programme (UNDP) has extended a programme to improve the flood and tidal wave forecasting in Bangladesh till 1982 according to an official source.

The Meteorological Department which has undertaken eight projects to modernise its weather forecasting system would greatly benefit from the programme designed to remove various obstacles now facing the department.

Meanwhile the UNDP has undertaken training of the weather experts in computer programming and data processing on weather forecasting.

Under another contract with UNDP the Meteorological Department has strengthened its weather services for the air services.

Total allocation for the department for 1980-81 was Taka 172.45 lakh but only Taka 43.91 lakh were spent till March 1981.

Some of the important programmes of the Department to improve the services are: Khepupara Radar station. So far Taka 82.20 lakh out of total allocation of Taka 90 lakh had been spent. The station, when completed, would provide coverage for the entire coastal areas of the country.

Development of communication services for weather forecasting: Plan to be implemented at a cost of Taka 149.66 crore, the programmes are designed to remove the present difficulties in relaying information on weather to the objectives.

Workshop and laboratory: About 90 percent work of establishing the project in Dacca for processing various date and maintenance of the centres have been completed. The programme is to cost Taka 118 lakh.

Weather station at Mohakhli, about 95 percent work of the project to be set up at a cost of Taka 66 lakh have been completed.

Beside these, work on construction of housing accomodation for the weatherman at Agargaon and a training centre is nearing completion.

The Meteorological Department planned to set up a weather observatory at Tangail while the construction of such observatory at Feni, Sitakund and Hatiya is at various stages of completion.

During past few years the Met Department has innovated a number of new programmes to keep the people conscious about weather and also provided them with important information about weather for agricultural activities.

One of them was warning for unusual rainfall. During 1977-78 the Department had provided 43 warning which increased to 77 in the following but reduced to 65 in 1979-80 and slightly increased in 1980-81.

The major services were rendered to the air services which were given 8660 weather forecast while the shipping services were properly fed.

CSO: 5500/7166

BRIEFS

TELEGRAPH, TELEPHONE BOARD--The Bangladesh Telegraph and Telephone Board would instal 340 more coin-box telephones throughout the country during the current year. It is gathered that to date the T&T Board has already installed 160 coin box telephones at various places. During last year (1980-81), the T&T Board had commissioned the following automatic exchanges: Ramna (Dacca) Central Exchange: 10,000 lines; Sher-e-Bangla Nagar additional exchange: 3000 lines; Jessore additional exchange: 600 lines; Narshingdi additional exchange: 400 lines; Sagarika (Chittagong) exchange: 600 lines; and Kurigram (Rangpur) exchange: 400 lines. The following connections under the T&T Board's High Frequency Microwave project have been established: (a) Bogra-Shantahar-Natore-Rajshahi; (b) Kushtia-Chuadanga; (c) Phulbari-Dinajpur-Thakurgaon. Other development p-ojects of the T&T Board completed during the last fiscal year also include the 14 base stations commissioned under the "radio PCO in rural areas." Of the existing 170 PCO's 47 had been commissioned during the last fiscal year (1980-81). [Text] [Dacca THE BANGLADESH TIMES in English 17 Jul 81 pp 1, 8]

CSO: 5500/7167

TELECOM EXPANSION PLAN FOR BALUCHISTAN

Karachi DAWN in English 10 Aug 81 p 5

[Text]

QUETTA, Aug 9: A comprehensive programme to expand telecommunication facilities is being implemented in Baluchistan during the current financial year to link farflung areas of the province with the telephone network. The plan also envisages extension of Quetta Central Telephone Exchange.

This was stated by the General Manager, Western Tele-communication Region, Mr Fatahul Azam, at a news conference in Quetta yesterday.

He said over Rs 83 million were spent for this purpose during the last financial year. Giving details of the expansion programme, he said the telephone capacity of the region is being expanded from 6000 to 10,000. The installed capacity of Quetta Central Exchange will be increased to 8000 lines by 1982. He said during the current year 1000 lines will be added to this exchange to provide still better facilities for the people in the provincial capital.

AUTOMATIC EXCHANGES

About the expansion of telecommunication facilities in the interior of the province, he said automatic exchanges are planned for Vieta Mohammad Pishin, Zhob, Kharan, Turbat Gwadar and Mastung.

He said the department plans to open more PCOS in different parts of the province every year. A plan for opening 75 PCOS in next three years is also being processed for implementation.

Mr Fatahul Azam said a new high capacity microwave system has recently been approved to link Karachi through Hub, Bela, Khuzdar Kalat, Quetta, Muslim Bagh, Loralai and Dera Ghazi Khan. Karachi is also proposed to be linked with Omara, Pasni, Gwadar and Jewni with spur with Turbat.

He said a 200-lines exchange with NWD trunk dialling facilities is under installation at Uthal and will be completed within next three months replacing the present hundred lines mini exchange.

Similarly 100-lines exchange has been set up at Hub and old exchanges at Bela and Gaddani are being replaced with new high capacity exchanges to provide dependable telecommunication services in Lasbela district. About Rs one million have been earmarked further modernising telecommunication services for Gaddani.

He said a multi-channel ultra high frequency system is under installation linking Karachi, Hub and Uthal replacing the existing overhead line with a reliable system.

The General Manager said the areas like Kohlu Agency, Chagai district and Mekran division had been given special attention for the development of telecommunication facility. He said places like Turbat, Ormara, Pasni, Gwadar, Panjgoor, and Jewni have been brought on better and more reliable trunk net work.

In northern areas of the province new line has been provided from Loralai to Zhob via Murghakibzai, Sinjavi and Ziarat and existing line between Sibi and Loralai is being further strengthened and modernised.

NEW TRUNK LINES

Moreover new trunk lines have been erected including Bela, Turbat via Awaran, and Khuzdar-Turbat via Awaran in order to provide reliable alternate routes from divisional headquarters at Turbat and provincial capital at Quetta.

He said a new high capacity microwave system between Quetta and Sukkur has recently been commissioned facilitating normal operation of telephone, telegraph and TV channels.

Giving facts and figures, the General Manager said the working of telecommunication system in this region was satisfactory and the numbers of complaints like excess billing, faults in telephones circuits etc were lowest in the country.

He said efforts were being made to further improve the telecommunication service within our limited resources.

The Director T and T, Syed Mehmood Ahmed, who was also present at the new conference said that a little over 1500 applications for telephone connections in Quetta were pending with the department. He hoped that the number will be considerably reduced with the addition of new telephone lines to the Quetta Exchange within next three months.—APP

CSO: 5500/4590

RURAL PHONE EXCHANGE OPENS

Manila BULLETIN TODAY in English 10 Aug 81 p 9

[Text] The Philippine Long Distance Telephone Co. (PLDT) has opened a telephone exchange in Tanjay, Negros Oriental, under the company's ₱110-million, ten-year rural telecommunications development program.

The second one of its kind to be installed in the Visayan region, the telephone exchange is equipped with the cross-bar type automatic switching system. Tanjay's phone exchange has an initial load of 100 lines and has a maximum capacity of 200 lines to meet the town's growing requirements.

Ramon Cojuangco, PLDT president and chief executive offer, said the company's rural telecommunications development program is in response to government's call for the private sector to contribute to the development of new growth centers in the countryside.

Jose P. Dans, Jr., minister of transport and communication, said PLDT's rural telecommunications development program is part of the company's effort to hasten the expansion of communication services throughout the country.

This is in line with the program of the government, as directed by President Marcos, to provide the whole country with the vital infrastructure of development, he said.

"Aside from its program in the rural areas, PLDT is also implementing a nationwide service improvement, expansion and modernization program," he said.

Like other PLDT rural telephone exchanges the Tanjay exchange is linked not only with PLDT's nationwide system but to all countries in the world reached by the company's overseas telephone service.

CSO: 5500/4903

THU DUC BUILDS WIRED RADIO STATION

Ho Chi Minh City TIN SANG in Vietnamese 13 May 81 p 7

[Article: "Our City: Thu Duc Strengthens Cultural Acitvities"]

[Text] Builds Wired-Radio Station--In the morning of 9 May 81, at the Thu Duc Cultural Center the district people's committee held a meeting to discuss plans for building a district wired-radio station including: Step I, build a transmitting station in the district; step II, perfect the receiving and transmitting systems in the villages, and at the same time get the machinery and personnel ready so as to be able to begin drawing up plans for building the station toward the end of May 1981.

With a view to expanding the transmitting network to timely serve the peasants during the summer-autumn season, the Thu Duc cultural and information branch has controlled and repaired the lines of the transmitting stations in the villages of Hiep Binh, Tang Nhon Phu, Binh Trung, Thanh My Loi, An Phu, and the Workers' Quarters. The transmitting network in Hiep Binh and Tang Nhon Phu villages has been expanded to the hamlets and production collectives. In Hiep Binh, construction of four broadcasting stations in four hamlets has been completed.

9213
CSO: 5500/4558

HANOI-HAIPHONG TELEPHONE LINE INAUGURATED

Hanoi QUAN DOI NHAN DAN in Vietnamese 1 Jul 81 p 1

[Article: "Coaxial Cable Telephone Communications Line Inaugurated Between Hanoi and Haiphong"]

[Text] VNA--In the morning of 30 June in Hanoi, the Posts and Telegraph branch held an inauguration ceremony to mark the completion of a 110-kilometer-long coaxial cable telephone communications line between Hanoi and Haiphong.

Pham Nien, head of the Posts and Telegraph General Department; Michel Combal, ambassador of the Republic of France in our country; and representatives of the French Communications Firm CIT-ALCATEL attended the ceremony.

This is a modern communications system over coaxial cable consisting of two conducting lines which surround a central conductor, capable of transmitting simultaneously 360 telephone calls.

After 5 months of design and building with the assistance of French technicians, the posts and telegraph units of Hanoi, Hai Hung and Haiphong have completed the work according to plan and put it into use before the rain-and-storm season.

9213
CSO: 5500.4587

BRIEFS

GULF COUNTRIES COMMUNICATIONS PROJECT--Abu Dhabi, 23 Aug (ENA)--The representatives of four Arab Gulf countries--the UAE, Saudi Arabia, Qatar and Bahrain--will meet in Abu Dhabi on Tuesday to discuss linking the four countries with a coaxial cable to enhance direction communications among them. 'Ali al-'Uways, director general of the UAE communications authority (Al-Amirtel), said the 1-day meeting will be devoted to discussing the coaxial cable, which will cost about 50 million dirhams. He said the project will strengthen direction communciations with some countries in the area and will increase the efficiency of several departments in the UAE and elsewhere. [Text] [GF240522 Abu Dhabi EMIRATES NEWS AGENCY in Arabic 1817 GMT 23 Aug 81]

CSO: 5500/4727

BRIEFS

NEW SATELLITE LINK--Kuwait, 18 Aug (KUNA)--The communication department of the KUWAIT NEWS AGENCY (KUNA) announced today it has developed a new system that will enable the agency's bureaus and subscribers in different countries to receive its news service simultaneously. KUNA satellite lines have been hooked to a distributor to enable all receiving points to receive the transmission at the same time, communication chief Hassan al-Khabbaz said. Al-Khabbaz cited the example of Bahrain, Vienna and London where subscribers to both the Arabic and English services are already receiving KUNA transmissions at the same time. [Text] [GF191221 Kuwait ARAB TIMES in English 19 Aug 81 p 6]

CSO: 5500/4727

POSTAL, TELECOMMUNICATIONS UNION ENDS MEETING IN LOME

Lome LA NOUVELLE MARCHE in French 31 Jul 81 pp 1, 4

[Text] Beginning on Tuesday, the sixth regular session of the Council of Ministers of the African Postal and Telecommunications Union (APTU) came to a close yesterday afternoon at the RPT [Rally of the Togolese People] headquarters in Lome.

The final communique issued at the end of the session and which was read by Mamadou Simpore, secretary general of the APTU, reveals important decisions, including: the establishment of an African Savings Bank Institute to serve as a center of research, training, cooperation and protection of savers and whose main office will be in Cotonou in the People's Republic of Benin; the adoption of a vast program of training, cooperation and assistance in the area of the organization of services; the adoption of a common action plan to help Chad; the adoption of a recommendation to vigorously protest South Africa's membership in the UPU [expansion unknown]; provisions relative to payment of postal orders and transfers; a proposed study of the telecommunications rates system for the APTU; the establishment of a repair and recalibration shop for scales, whose headquarters will be in Lome; the continuation of the study on possibilities of industrialization in the field of telecommunications equipment; approval of the study report on AFSAT [expansion unknown] needs, to be pursued in cooperation with all African and international organizations interested in the project in order to set up a data bank; and the establishment of a working capital fund totaling 100 million CFA francs in order to correct treasury difficulties that now paralyze the general secretariat on occasion.

The Council also voted to send official thanks to Togo for the smooth operation of the Union during its mandate.

The new president of the Union is Lt Col Francois Dossou, minister of transport and communications of the People's Republic of Benin. The seventh ministerial session of the APTU will be held next year in Cotonou, Benin.

The Council also expressed President Eyadema, his government and his courageous people "for the warm and fraternal welcome they extended to all delegations visiting Togo."

It should be noted that the countries belonging to the APTU are Benin, the Congo, the Ivory Coast, the Central African Republic, Djibouti, the Comoro Islands, Upper Volta, Mauritania, Mali, Nigeria, Rwanda, Senegal, Chad and Togo.

11,464
CSO: 5500/5059

INCREASE IN COMPUTER SERVICE EXPECTED

Victoria NATION in English 4 Aug 81 p 1

[Article by Rene Morel]

[Text]

A NEW parastatal company may come into existence soon to take Seychelles into the field of modern computer technology.

The Computer Services Division of the Finance Department, created a few months ago, is already installing, operating and maintaining computer services in government ministries and national companies. It is expected that by next year it will be run as an independent company offering an expanded service to private concerns as well.

The Principal Secretary for Finance, Mr. Guy Morel, has described the Computer Services Division, located at Oceangate House, as very important, because it is able to give quick service at little cost for such business work as accounting, store-keeping, preparation of bills and salaries — jobs that would normally take accountants many hours.

"One computor does in seconds what an experienced ac countant would do in several days; the computer cost for doing the work is very little compared to the accountant's salary; computers never get tired, and do not claim overtime. They reduce man-hours to fractions", Mr. Morel said.

The Computer Services Division has its own Seychellois staff, some of whom will soon be leaving in turns for overseas training. They are at present installing and programming some of the latest computer models available for business purposes.

Mr. Morel said computer service means a costly set-up — one computer alone costs R. 800,000. Therefore he regards the creation of a centralised computer services system as an important back-up service to assist not only the Government and national organisations, but also private businesses such as banks wishing to use computers.

The Government Treasury and the Seychelles Commodity Company Limited are the two biggest clients of Computer Services so far.

CSO: 5500/5063

TWO-DIMENSIONAL GRADIENT ADAPTIVE ALGORITHM FOR SIGNAL PROCESSING

Milan ALTA FREQUENZA in English May-Jun 81 pp 131-136

[Article by Giuseppe Martinelli, Mario Salerno, Istituto di Comunicazioni Elettriche, Facolta di Ingegneria, Roma, Renato Lucarelli, Fondazione Ugo Bordoni, Roma, Gianni Orlandi, Istituto di Comunicazioni Elettriche, Facolta di Ingegneria, Roma Dipartimento di Elettronica e Automatica, Facolta di Ingegneria, Ancona, and Mario Turchi, Sielte, Roma: "A New Two-Dimensional Gradient Adaptive Algorithm for Signal Processing"]

[Text]

Abstract. The optimal adjusting step in the gradient algorithms may be automatically acquired by applying a suitable algorithm, recently proposed by the authors for the one-dimensional case. The extension to the two-dimensional case is considered in the present paper with application to high-speed data transmission modem. The results obtained proves the effectiveness and flexibility of the proposed algorithm in signal processing.

1. INTRODUCTION

The convenience of gradient algorithms for adaptive signal processing relies on the simplicity of the resulting hardware. A clear example in this direction in the field of the one-dimensional data transmission equalizers is the celebrated model proposed by Lucky [1] . However, a very important drawback connected with the correct use of these algorithms is the problem of acquiring optimal adjustment. The present authors recently proposed an algorithm for overcoming the said inconvenience. This algorithm gives the possibility of automatically determining the optimal adjusting step [2,3] .

The effectiveness of the algorithm has been ascertained: 1) in the case of one-dimensional data communication systems by simulation tests [4,5] . These tests regarded the effect of fixed-point arithmetic; 2) in the case of echo-cancellers for long-dinstance telephone connections, where adaptive filters with several hundred coefficients are necessary. The results of simulation tests in presence and absence of double talking are available in [6] .

In the present paper we describe the extension of the algorithm to two-dimensional data communication systems, which is required when a high speed application is considered. The description of the extended algorithm is discussed in sect.3

and its use in the realization of a complex equalizer in a data transmission modem is considered in sect.4. Contributions pertinent to the topic dealt with in the paper are available in |7÷11|.

2. REVIEW |2,3|

Let the sampled baseband received signal be

$$(1)\qquad x_n = x(nT) = \sum_m a_m h(nT-mT) + v(nT) \qquad n=0,\pm1,\pm2,\ldots$$

where a_m is the information symbol (assumed to be coincident with a binary pseudo-random sequence of values ±1); $h(t)$ is the overall system impulse response; $v(t)$ is the additive channel noise; $1/T$ is the symbol as well as the sampling rate.
The output of the tranversal equalizer is

$$(2)\qquad y_n = y(nT) = \underline{c}'\underline{x}_n$$

where the prime denotes transpose; $\underline{c}$ is the vector of the tap weights and $\underline{x}_n$ that of the received samples, i.e..

$$\underline{c}' = |c_N, c_{N-1}, \ldots\ldots, c_0, \ldots\ldots, c_{-N+1}, c_{-N}|$$

$$(3)\qquad \underline{x}_n' = |x_{n-N}, x_{n-N+1}, \ldots\ldots, x_n, \ldots\ldots, x_{n+N-1},$$

$$x_{n+N}|$$

Under the assumption that the error sequences $\{y_k-a_k\}$ are independent random variables, the mean square (m.s.e.) is given by

$$(4)\qquad \mathcal{E}(\underline{c}) = \underline{c}'A\underline{c} - 2\underline{c}'\underline{v} + 1$$

where: $\underline{v}' = |h_{-N}, h_{-N+1}, \ldots\ldots, h_0, \ldots\ldots, h_{N-1}, h_N|$ denotes the vector of the $2N+1$ center-channel samples, and the term a_{ij} of the matrix A is equal to

$$(5)\qquad a_{ij} = \sum_m h_{m-i}\, h_{m-j} + \sigma^2\, \delta_{ij}$$

with σ^2 being the noise variance at the equalizer input and δ_{ij} being Kronecher's delta.
The tap weights are adjusted in the gradient algorithm according to the recursion

$$(6)\qquad \underline{c}^{(k+1)} = \underline{c}^{(k)} - \underline{r}^{(k)}\Delta_k$$

where

$$(7)\qquad \underline{r}^{(k)} = A\underline{c}^{(k)} - \underline{v}$$

is the gradient in correspondence to the k-th step. The optimal adjusting step is equal to

$$(8)\qquad \Delta_k = \frac{\underline{r}^{(k)'}\underline{r}^{(k)}}{\underline{r}^{(k)'}A\underline{r}^{(k)}}$$

In |3| we proved, under the assumption of $\{x_i\}$ to be independent random variables, that

$$(9)\qquad (\underline{r})_i = \langle (y_n - a_n)x_{n-i}\rangle$$

$$(A\underline{r})_i = \langle \eta_n x_{n-i}\rangle \quad ; \quad \eta_n = \underline{r}'\underline{x}_n$$

where: $\langle\cdot\rangle$ denotes the expectation operation; the subscript i represents the i-th component of the corresponding vector. The scheme of the one-dimensional equalizer which corresponds to the above algorithm is shown in fig.1. It operates iteratively. Any step includes two sub-steps:

1) in the first one the switch is in the upper position and $\underline{r} = \underline{z}$ after $N_c T$ seconds (N_c is the number of samples required for averaging |3|);
2) in the second substep the switch is in the lower position and $\underline{s} = \underline{z}$ after $N_c T$ seconds. At the end of this substep the values of the taps are updated as shown in fig.1b.

From fig.1 we see that the proposed equalizer contains a double number of multipliers with respect to traditional equalizers |1| .

3. TWO-DIMENSIONAL ALGORITHM

The extension of the gradient algorithm with inherent optimal adjusting step to the two-dimensional case is easily accomplished, if we use a complex description of all the quantities involved in the corresponding signal processing. Consequently, the quantities a_m, x_n, $\underline{c}$, $\underline{x}_n$, y_n $h(nT)$, $v(nT)$ appearing in equ.s (1),(2),(3) are complex. We will denote their real and imaginary parts with the subscripts 1 and 2 respectively.
The m.s.e. in the present case becomes

$$(10)\qquad \mathcal{E}(\underline{c}) = \underline{c}'^{*}A\underline{c} - 2R_e|\underline{c}'\underline{v}'| + 1$$

where * stands for complex conjugate; the term a_{ij} of A is given by

$$(11)\qquad a_{ij} = \sum_m h^*_{(m-i)}\, h_{m-j} + (\sigma_1^2 + \sigma_2^2)\delta_{ij}$$

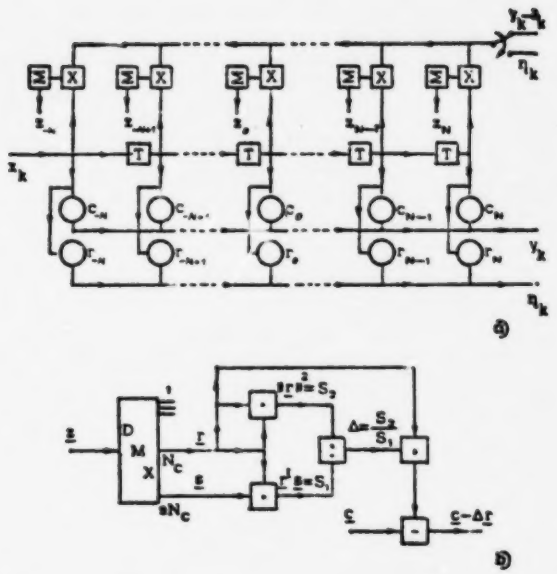
which proves that A is a hermitian positive definite matrix; $R_e\ |\ldots|$ stands for the real part of ....
The tap weights are adjusted by the recursion (6) where

$$(12)\qquad \underline{r}^{(k)} = A\underline{c}^{(k)} - \underline{v}^*$$

and the optimal adjusting step is

$$(13)\qquad \Delta_k = \frac{\underline{r}^{(k)'*}\underline{r}^{(k)}}{\underline{r}^{(k)'*}A\underline{r}^{(k)}}$$

From (13) we see that Δ_k is a real quantity in spite of the fact that the gradient is a complex vector. The quantity Δ_k may be approximatively calculated as in the one-dimensional case by formulas similar to (8). Namely, we may easily



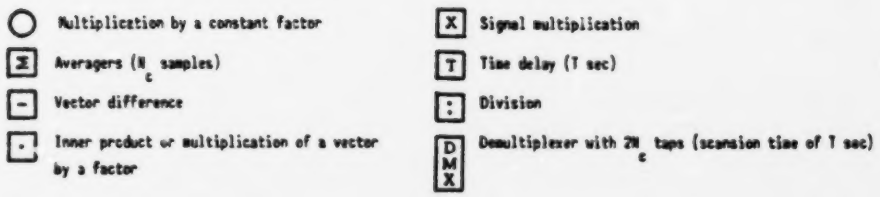

Multiplication by a constant factor
Averagers (N_c samples)
Vector difference
Inner product or multiplication of a vector by a factor
Signal multiplication
Time delay (T sec)
Division
Demultiplexer with $2N_c$ taps (scansion time of T sec)

Fig.1 - Diagram of the adaptive equalizer with inherent optimal adjusting step. Part b shows in detail the process for updating the values of the taps.

prove, by following a procedure similar to that used in [3], that

$$(\underline{r}^*)_i = \langle (y_n - a_n)^* x_{n-i} \rangle$$

(14)

$$(A\underline{r}^*)_i = \langle \eta_n^* x_{n-i} \rangle \quad ; \quad \eta_n = \underline{r}' \underline{x}_n$$

The resulting scheme of the complex equalizer with inherent adjusting step may be represented as in fig.1 with the following modifications:

1) all the quantities are complex, except S_1, S_2 and Δ ;
2) the quantities $y_k - a_k$ and η_k must be complex conjugated before entering the switch;
3) the vector $\underline{r}$ is given by the complex conjugate of $\underline{z}$ in the first substep of operation;
4) the quantity S_1 should be real; consequently, we can obtain it as $Re|\underline{r}'\underline{s}|$, taking account that an imaginary part could be present due to the approximate nature of the estimates.

4. APPLICATION OF THE TWO-DIMENSIONAL ALGORITHM TO A HIGH-SPEED DATA COMMUNICATION SYSTEM

The two-dimensional algorithm described in the previous section has been used for implementing the equalizer in a high-speed data transmission modem. The complete data transmission system has been simulated; its scheme is depicted in fig.2. The blocks appearing in this figure are in the order:

1) Coder

The 9600 binary data are grouped into words of 4 bits. Each word of 4 bits is then mapped into one of the 16 two-tuples (a_1, a_2) (constellation). The output sequences $\{a_1\}$ and $\{a_2\}$ have a rate of 2400 bauds.

2) Shaping filters F:

They are 10 percent roll-off raised-cosine filters with cutoff frequency equal to 1200 Hz, implemented by a transversal structure having 121 taps. The rate of the input sequences is 1400 samples/s, obtained by inserting 5 zero samples between two adjacent symbols of the sequences $\{a_1\}$ and $\{a_2\}$.

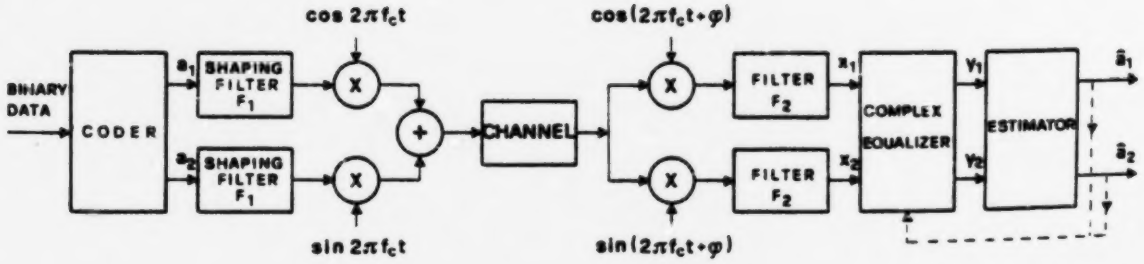


Fig.2 - Scheme of the data transmission system.

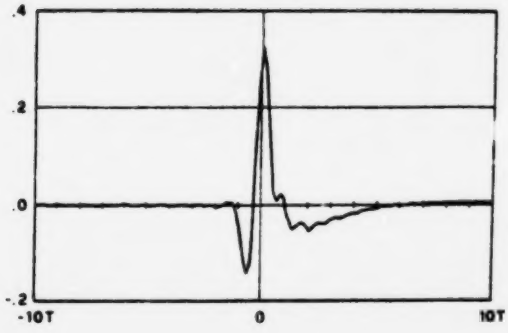


Fig.3-Impulse response of the telephone channel.

3) Modulator
The sequences $\{a_1\}$ and $\{a_2\}$ amplitude modulates, respectively, an in-phase and quadrature carrier with f_c=1700 Hz to generate the transmitted signal.

4) Channel
The impulse response of the channel is shown in fig.3. This response has been obtained by the FFT algorithm applied to the amplitude and delay characteristics of a typical telephone channel [12]. The channel has been simulated by a transversal structure with 121 taps operating at a rate of 14400 samples/s.

5) Demodulator
A suitable value of the phase ϕ is necessary in order to recover the correct alignment of the received constellation. In the present case,we have chosen ϕ=60.°.

6) Filters F2
They are chosen with the same characteristics of the shaping filters F_1 . The rate of the output sequences is 2400 bauds, obtained by retaining one sample every 6.

7) Complex equalizer
The detailed scheme of this block is described in sect.3.

8) Estimator
The estimated couple $(\hat{a}_1, \hat{a}_2)$ is the point of the constellation closest to the received couple (y_1, y_2).

4.1 Simulations

The transmission through the previous system with an equalizer of 31 complex taps is simulated by considering as the input binary sequence a 2^{15}-1 CCITT pseudo-random sequence. During the training, performed with the "cyclic equalization" technique [13] , the transmitted two-tuples of the constellation are (3,3) , (-3,-3) , originated by a 2^5 -1 CCITT pseudo-random sequence. The constellation corresponds to a combined amplitude and phase modulation (AM-PM) [14] .

The number of samples used for computing the averages in the equalizer is equal to the number of its taps, i.e. N=31 , during the training and to 128 during the adaptive mode. The starting values of the taps are chosen to be all equal to zero with the exception of the central tap set to 1.

The test has been performed by passing 3180 bits corresponding to 10 iterations of training and 10 iterations of adaptive mode. The performance of the proposed algorithm is quite satisfactory, as it results from the behaviour of the m.s.e. shown in fig.4. This property is confirmed by the pictorial representation of the received couples in correspondence to the first iteration of the training and to the last iteration of the

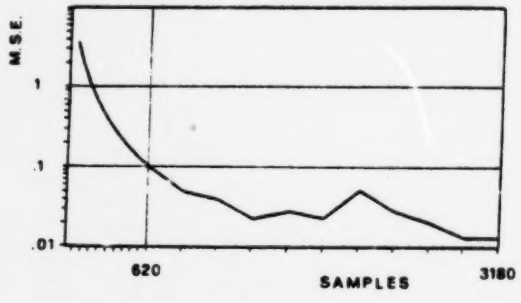


Fig.4 - m.s.e. versus the number of samples.

adaptive mode, shown in fig.5 and 6. It is interesting to note that in the first iteration of the training (fig.5) there are present several errors, corresponding to the received couples represented by the small circles depicted in the figure. In the last iteration of the adaptive mode there are not errors and the received couples are represented by points conteined in very small areas around the constellation points. Finally, fig.7 shown the typical variation of the adjusting step automatically operated by the algorithm.

Further tests have proved the effectiveness of the equalizer also in presence of noise. The results of these tests are summarized in fig.8 and 9, where the signal-to-noise ratio is defined as the ratio between the mean powers of the signal and the Gaussian noise at the output of the channel (fig.2). We see from fig.8 that the convergence speed is slightly affected by the noise, as it results in the one-dimensionale case. The final m.s.e., instead, is affected by the noise, decreasing its value with S/N (fig.9).

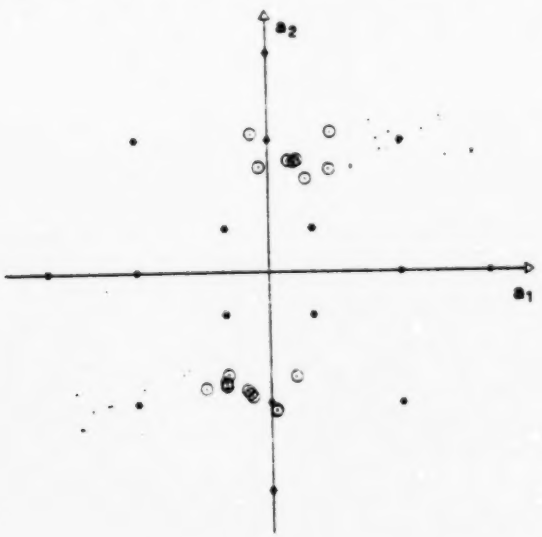


Fig.5 - Received couples in correspondence to the first iteration of the training. The small circles represent the couples which give error in the estimator. The stars represent the transmitted constellation.

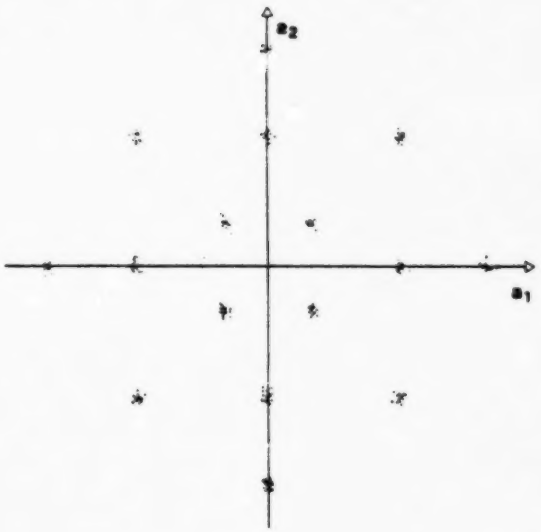


Fig.6 - Received couples in correspondence to the last iteration of the adaptive mode. There are no errors in this case and the received points are very close to the constellation.

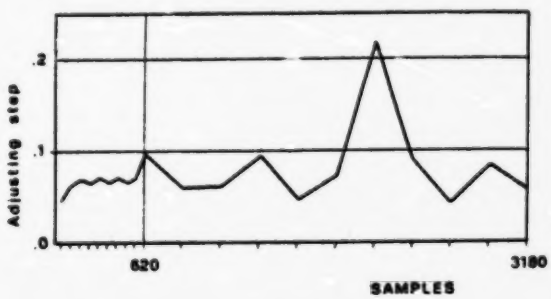


Fig.7 - Adjusting step versus the number of samples.

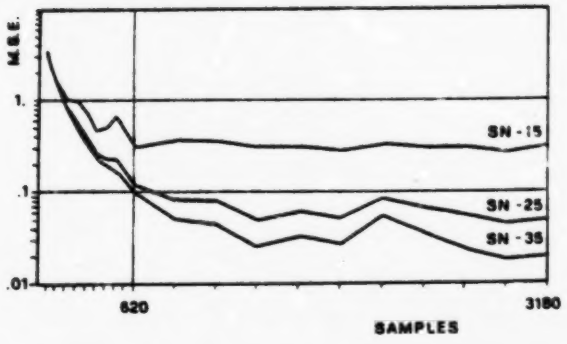


Fig.8 - m.s.e. versus the number of samples in presence of noise. The quantity S/N is the ratio between the mean powers of the signal and the noise at the output of the channel expressed in dB.

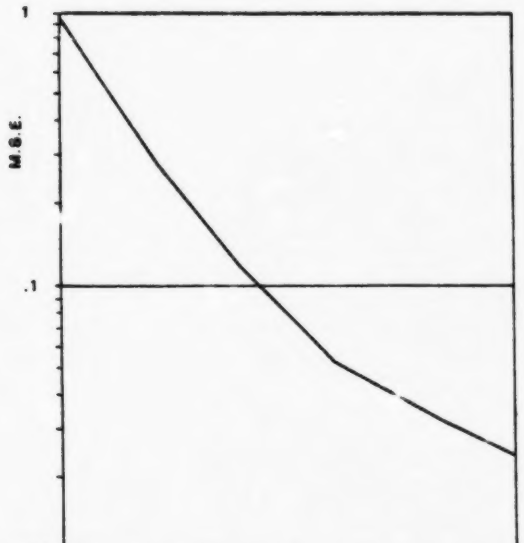


Fig.9 - m.s.e. versus the signal-to-noise ratio S/N. The value of the m.s.e. is calculated by averaging the m.s.e. corresponding to the last four iterations in the adaptive mode.

5. CONCLUSIONS

The effectiveness of the gradient algorithm with inherent optimal adjusting step in the case of two-dimensional data communication system has been pointed out in the paper. The resulting complex equalizer has a structure which is suitable for microprocessor implementation. Further work, presently in progress, concerns with its real-time realization by a mixed architecture including bit-slice components and hardware multipliers.

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IMPLEMENTATION OF MULTISTANDARD TELETEXT SIGNAL GENERATOR

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[Article by Renzo de Paoli, Istituto Elettrotecnico Nazionale "Galielo Ferraris", Corso M. D'Azeglio 42, 10125 Torino, Ricardo Daffara, Alfredo Rinaudo, Centro di Studio Per La Televisione del C. N. R., I. E. N. G. F., Corso M. D'Azeglio 42, Torino, and Franco Mussino, Istituto di Elettrotecnica e Telecomunicazioni, Politecnico di Torino, Corso Duca Degli Abruzzi 24, 10129 Torino: "A Multistandard Teletext Signal Generator"]

[Text]

Abstract. This paper describes the implementation of a versatile teletext signal generator whose most significant feature is its software and hardware programmability; this allows the generation of a teletext signal according to different standards, for example CEEFAX/ORACLE or ANTIOPE.

1. INTRODUCTION

The Teletext is a very important and interesting service that many television broadcasting companies are planning to offer to their subscribers in the next years.

This service is able to satisfy a number of information needs, offering to the viewers written messages or simple drawings.

The Teletext signal uses the unoccupied part of the television waveform (the field-blanking interval) for the transmission of a number of binary-coded characters, at a given bit rate. Since the unoccupied space in the television waveform is limited, also the number of written pages that can be transmitted sequentially in a given time is limited. For example, using only two television lines, it is possible to transmit a set of one hundred pages of 24 rows of 40 characters each. In this case, the acquisition of a new page in the receiver can be waited for a maximum of 24 s, after its selection.

In the last years a few Teletext systems have been developed in different Countries;

some of them are already in operation, as the British CEEFAX/ORACLE, others such as the French ANTIOPE and the Canadian TELIDON are nothing more than experimental.

In order to be able to carry out some experiments with different standards, a number of complex pieces of equipment are needed. Since the generators available on the market are able to operate only with a well defined standard, the design and the implementation of a multi-standard signal generator was carried out.

To get such a versatility, the generator was divided in two parts: the control unit and the transmitter unit.

The control unit has been designed using a microprocessor which provides both editing and storage of data to be transmitted; this unit also codifies the digital information according to a specific standard.

The transmitter unit has been designed using normal analog and digital circuitry and provides the synchronization of the above digital information with the television line frequency and also the insertion of the digital signals on the video waveform, during the field blanking interval.

The control unit was implemented with a modular approach, in such a way that the memory can be expanded up to store and then to transmit a complete set of pages (up to a maximum of one hundred); this unit also provides interfaces with a terminal (keyboard), external memory (such as disk, tape, etc.), other intelligent units and the transmitter unit.

The operation of the control unit can be modified through the software; until now, complete programs have been developed for the British CEEFAX/ORACLE Teletext system and for the French ANTIOPE. The transmitter unit was also designed to be widely programmable. This allows the selection of the bit-rate of the data transmission and of other characteristic parameters according to the chosen Teletext system.

Therefore this generator is really versatile and when suitable software has been developed, a large number of possible Teletext standards can be generated and transmitted with the same equipment.

2. THE CONTROL UNIT

The control unit has the main task of generating and continuously updating the digital information to be sent to the transmitter unit.

A microprocessor can accomplish this task; therefore this unit has been designed using such a device. Its operation is done under software control.

At the time of the design (1977), one of the most suitable device was the Fairchild F8 microprocessor, which had the important feature to be sufficiently fast and widely available on the market from several manufacturers. Obviously other microprocessors of suitable characteristics can be used.

Nevertheless, the first experimental transmission has been made using the PDP 11/45 general purpose computer, fully available at the CNR TV-Center, where the Teletext generator has been designed and assembled.

The use of a microprocessor instead of a minicomputer has the main advantage that the Teletext generator can be completely independent from the external apparatus and easily transportable where the measurements or tests are to be made.

2.1 Hardware description

The design of the control unit has been done taking into account the possible expansions of the memory and of the interfaces; therefore a modular approach has been adopted. Eight different cards, of Eurocard format (100x160 mm), were implemented; they are:

- the central processing card (CPU card) implemented around the F8 family of integrated circuits;
- three kinds of memory cards, with selectable addresses, that is: 4 kbyte of EPROM, 4 kbyte of static RAM and 16 kbyte of dynamic RAM;
- the serial 20 mA current-loop interface, teletype compatible;
- the serial EIA standard RS 232 C interface;
- the general purpose Input/Output interface;
- the PDP 11/DR 11A parallel interface.

Among these circuits the most important is the parallel I/O interface, between the two units of the Teletext generator. The main characteristics of it are summarized in Table I; the diagram of fig. 1 indicates the data and control signals in this interface.

The data transfer through this interface is controlled by two "Transfer Request"

TABLE I

Main characteristics of the parallel interface between the two units of the Teletext generator

- Number of Data Output lines (Data latched on card)	8
- Number of Data Input lines (Data to be latched on peripheric)	8
- Lines available for Control Word (Output)	3
- Lines available for "Transfer Request" (active high) (Inputs)	2
- Data output strobe (positive pulse)	1
- Data input strobe (positive pulse)	1
- Ground	2
- Number of available lines	25

lines which can generate, under program control, an interrupt sequence in the microprocessor system. These "Transfer Request" lines are cleared by the microprocessor during the servicing routines, with the hardware generation of a "New Data Ready" pulse during the execution of a data output instruction and a "Data Transmitted" pulse during the execution of a data input instruction.

The memory of the Teletext generator is organized as in the following:

- the 64 byte of the F8 scratchpad internal memory are used as pointers and current data store;
- the first 16 kbyte of memory locations are devoted to program store (on EPROM or static RAM, if external mass memory is used);
- the other 48 kbyte of memory locations, directly addressable with the F8 microprocessor, are used as data store.

Really two banks of 48 kbyte of memory locations (on dynamic RAM) are available for data store. The bank selection bit is provided by an I/O port of the F8 microprocessor.

Each one of the two data memory banks can support 51 pages of UK Teletext information, containing 960 characters each.

2.2 Software description

The monitor program of the multistandard Teletext signal generator controls and supervises all the operations of the microprocessor.

Firstly, the program provides the control of the flow of the data from the memory to the interface circuits of the transmitter unit.

Secondly, the program controls the operation of the various peripheral interfaces; so it is possible to perform input or output operations using a serial peripheric (such as a full-ASCII encoded keyboard), or a minicomputer, or the front-panel console (containing switches and a LED display).

The software has been organized in such a way that it is possible to send commands to the monitor or edit text-pages to be transmitted, using each one of the alphanumeric peripheral.

The program consists of a start-up procedure, two main loops (namely: TELETEXT LOOP and MONITOR LOOP), and some accessory subroutines (fig. 2).

At power-on or when a reset is performed, the monitor program executes specific hardware initializations and presets some transmission parameters with given constants, according to the selected Teletext standard (fig. 3).

The main loops perform only some test procedures under the input/output request and the possible calls to the subroutines serving these requests. The TELETEXT LOOP (or TLOOP) is synchronized by the TV field interval (20 ms) using the master request signal coming from the transmitter unit (fig. 1 and 4).

As soon as this signal becomes active, TLOOP calls the Teletext transmission routine (TXTRAN). At the end of it, the possible requests coming from other peripherals

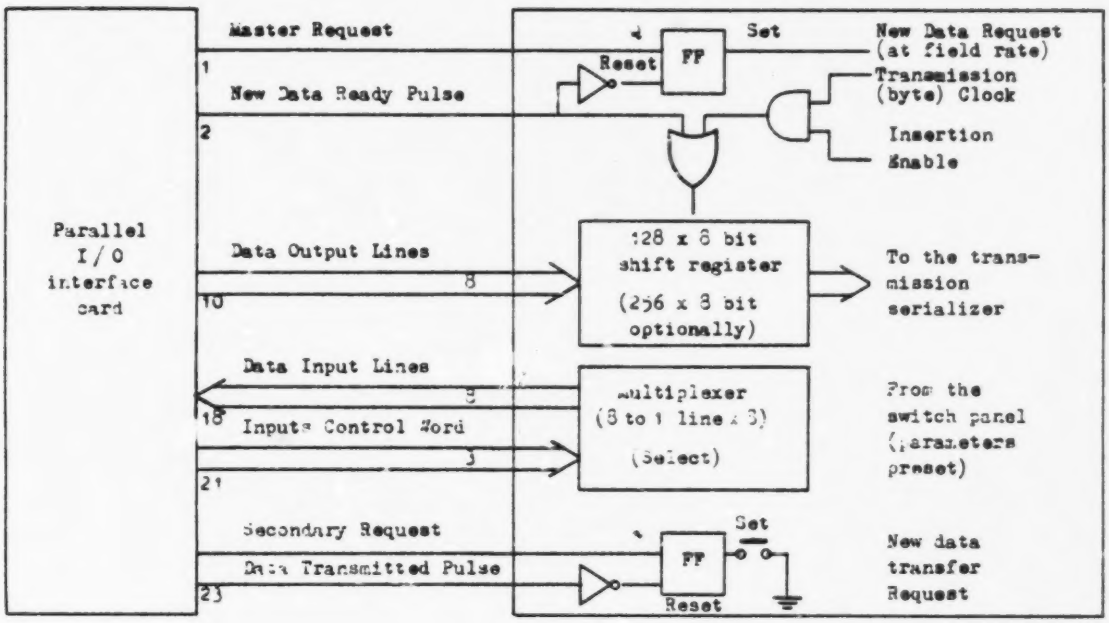

Fig. 1 - Hardware interface between the control unit and the transmitter unit of the multistandard Teletext signal generator.

are tested. If these requests are not present, the program execution starts again to wait for a transmitter master request.

The MONITOR LOOP (or MLOOP) is not involved with the Teletext signal transmission. When this program is running, the microprocessor does not control the signal encoder and can execute other operations, such as high speed input/output, on-line debugging of programs, minicomputer intercommunication, preset of Teletext parameters (fig. 5).

The operator can call each one of the loops from the others by means of specific commands coming from any peripheral. The commands are decoded by special purpose subroutines (TXTDEC and MCNDEC), which call the correspondent executory subroutines.

The minicomputer intercommunication subroutine allows the storage of all the text-pages to be transmitted also in the mass memory of a minicomputer or development system. This subroutine is also useful in editing text off-line and to develop new user routines by means of the utility programs of a large operating system.

Other auxiliary subroutines perform the following operations:

- to update the time information (the software clock counts the signal encoder requests coming at 50 Hz rate);
- to generate an odd-parity code for the Teletext characters;
- to perform high speed serial input/output operations;
- to execute characters echo on the output peripherals;
- to allow on-line debugging of programs (by means of the full-ASCII keyboards as data input and the front-panel console with a LED display as data output);
- to set the header control bits of the selected page and select the transmission standard (CEEFAX/ORACLE or ANTIOPE) decoding the switches on the front-panel console;
- to allow the setting of the date and of the clock on all the pages headers (CEEFAX/ ORACLE standard only);
- to continuously transmit a selected page in order to compose or correct it (in this case a blinking mark is displayed on the TV screen to point at the text insertion place);

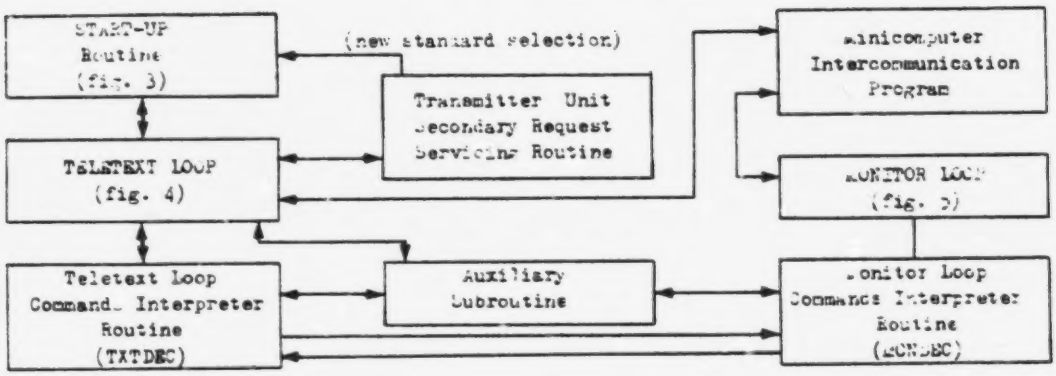

Fig. 2 - General flow chart of the Control Unit's Program.

- to allow the movements of the blinking mark in any direction and to insert or delete characters in the written text;
- to restart the normal sequential transmission of all the text pages.

3. THE TRANSMITTER UNIT

The main tasks the transmitter unit has primarily to accomplish are:

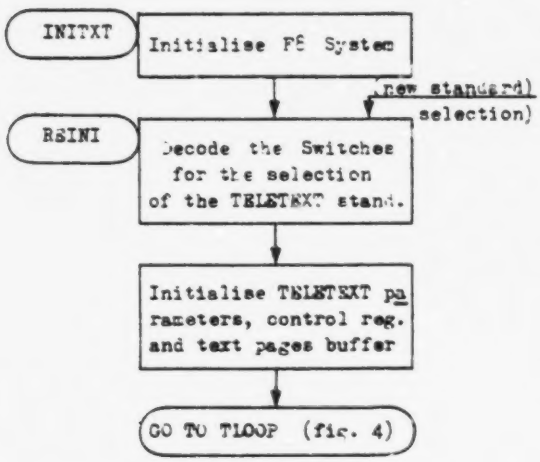
INITXT
Initialise FS System
(new standard selection)
RSINI
Decode the Switches for the selection of the TELETEXT stand.
Initialise TELETEXT parameters, control reg. and text pages buffer
GO TO TLOOP (fig. 4)

Fig. 3 - Flow-chart of the START-UP Routine.

- to convert the parallel data string, coming from the control unit, into a serial sequence of bits;
- to derive from the incoming television signal the synchronizing pulses in order to be able to allocate the digital signal into the television waveform.

As an option, this unit should generate a black and white bar-signal, that can replace the external television signal.

The block diagram of fig. 6 shows in detail the various parts of the transmitter unit.

The incoming television signal is first dc-restored, to set the black level at a fixed voltage, making more easy the mixing with the digital signal. The external television signal can be replaced with that generated inside. An identification circuit is able to recognize the presence of the external TV signal and in case of its absence the internal bar-signal generator is automatically switched on.

The incoming television signal is also sent to a sync-separator, which derives the line and field synchronizing pulses, and are used to synchronize the local sync-generator, freely running when no external TV signal is applied to the Teletext generator.

The clock generator circuit has three different quartz-controlled oscillators that can be, one at a time, locked to the TV line frequency to generate the appropriate bit rate of the Teletext signal; moreover, an external input is available when an asynchronous bit rate is required.

The parallel-to-serial digital signal converter, which is the most important part of the transmitter unit, has the task of converting the parallel data, coming from the input/output interface of the control unit, in a serial sequence of bits. The converter works under the control of the insertion window generator, which allocates the serial information in a specific number of lines

of the field blanking interval of the television waveform; there is the provision on the front-panel of suitable switches (fig. 6) that allow the selection from one to twelve of the number of TV lines occupied by the digital signal and to allocate them in any position in the TV field blanking interval.

The parallel-to-serial conversion is operated by means of eight 128-bit serial-in/serial-out shift registers that store the digital information coming from the control unit, during a large part of the field period. The content of these registers is then transmitted at high speed using an 8-bit parallel-in/serial-out shift register, that generates the string of bits, at the wanted bit-rate. The digital signal is mixed with the video waveform via a shaping filter, that reduces the bandwidth of the digital signal to about 5 MHz.

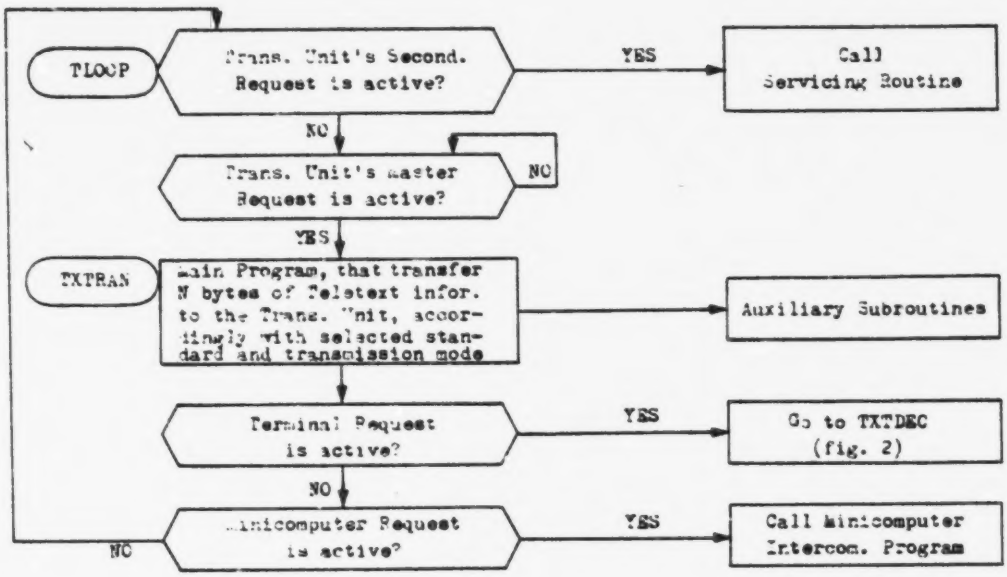

Fig. 4 - Flow-chart of TELETEXT LOOP Program.

4. CONCLUSIONS

The Teletext signal generator here described has been designed specially for testing purposes; the development of its various parts has been done taking into account the possible needs of different Teletext standards. This versatility has been reached using a microprocessor in the control unit and allowing the selection of the number of the TV lines occupied by the digital signal and their position in the TV field blanking interval.

Up to now, this generator is able to transmit a Teletext signal according to two standards, the British CEEFAX/ORACLE and the French ANTIOPE.

Examples of pages transmitted according to these two standards are shown in fig. 7 and 8. The external aspect of the multistandard Teletext signal generator is shown in fig. 9.

Acknowledgement

The authors are very grateful to Prof. C. Egidi, Director of the Centro di Studio per la Televisione del C.N.R., for the encouragement and support during the work and to Ing. A. Farina and P. Belisomi of the Indesit S.p.A., for the valuable contribution in defining the characteristics of this generator.

- The development of this multistandard Teletext generator has been undertaken with the support of INDESIT S.p.A., None (Torino), Italy, a manufacturer of television receivers.

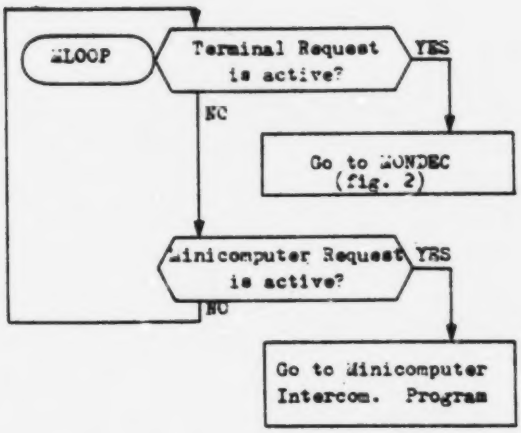

Fig. 5 - Flow-chart of MONITOR LOOP Program.

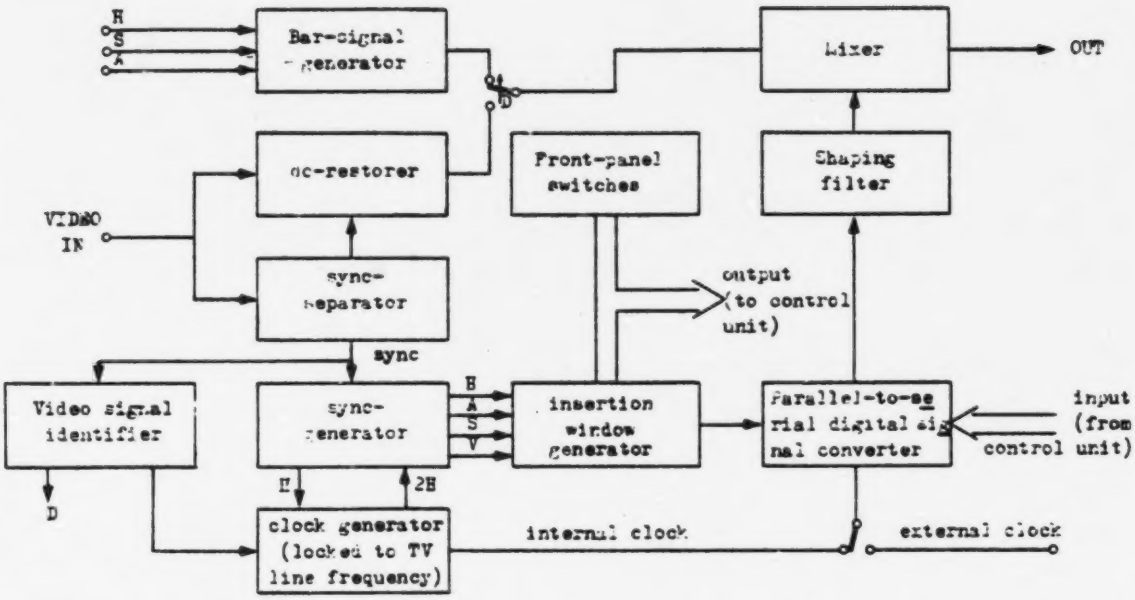

Fig. 6 - Block diagram of the transmitter unit. A: horizontal blanking; S: sync-pulses; D: deviator
D: deviator (electrically operated); H: line pulse driver; V: vertical pulse driver.

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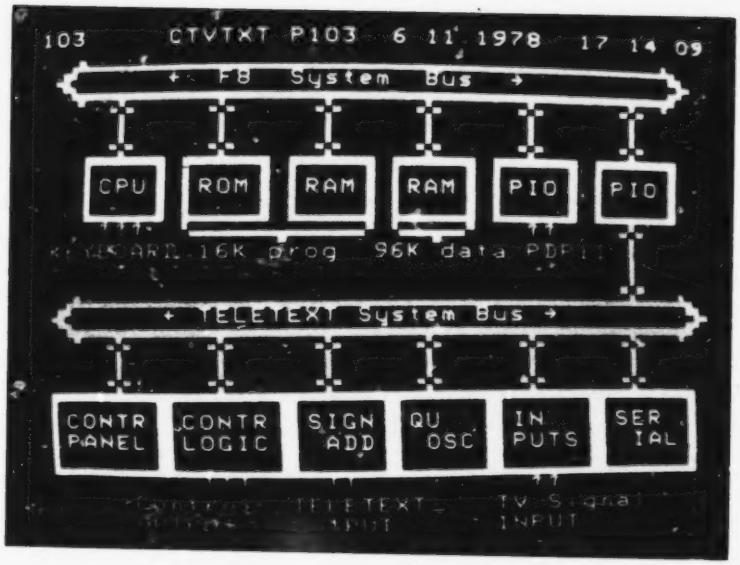

Fig. 7 - Example of a Teletext page transmitted according to the British CEEFAX/ORACLE standard.

Fig. 8 - Example of a Teletext page transmitted according to the French ANTIOPE standard.

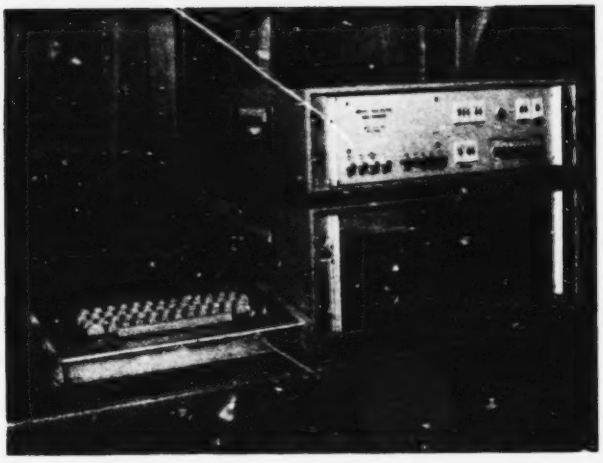

Fig. 9 - The external aspect of the multi-standard Teletext signal generator.

CSO: 5500/2289

NEW IONOGRAM STORAGE-AND-DISPLAY SYSTEM DESCRIBED

Milan ALTA FREQUENZA in English Jul-Aug 81 pp 219-222

[Article by Antonio Guiducci, Istituto Elettrotecnico Nazionale "Galileo Ferraris", Corso Massimo D'Azeglio 42, 10125 Torino: "A New Type of Ionogram Storage-and-Display-System Using a CCIR 625 Lines/Frame TV Monitor"]

[Text] Abstract.A new system for the memorization, processing and visualization of ionograms, that makes use of a CCIR 625 lines/frame TV monitor is described. An increased flexibility in the analysis of ionospheric data is achieved. In particular, the completely automatic scaling of the ionospheric characteristics is made possible.

1.- INTRODUCTION

The analysis and the interpretation of the ionospheric phenomena are based upon the collection of data that are gathered through several different approaches: radars, missiles, satellites, riometers and so on. Among them is the ionosonde: an apparatus which has extensively contributed to understand the dynamics of the upper atmosphere, especially because of its distribution over the entire globe and of its handiness, which permit a complete observation of the ionosphere both geographically and temporally.

The ionosonde is a radar operating on a variable frequency (often between 1 and 16 MHz) which beams vertically overhead its radiowaves and detects the delay time of the echoes returned from the successive ionospheric layers. The output of the ionosonde is a plot giving the virtual height of reflection versus frequency, namely the ionogram. Several characteristic parameters, as the minimum heights and the critical frequencies of the different layers, together with the MUF-(3000) (Maximum Usable Frequency over a distance of 3000 km) and Fmin (lowest frequency at which echo traces are observed), can be extracted from one ionogram and ordered in tables [1]. This way, a large quantity of data become available to the laboratories and scientists all over the world.

At the IEN (Istituto Elettrotecnico Nazionale) in Turin a digital ionosonde by the trade name of "Digisonde 128" has been operating since 1976: its digital output is stored on magnetic tapes. The present paper describes a new system for the memorization and visualization of the ionograms, designed and developed at the IEN, and now in operation for the semiautomatic reading of the ionospheric parameters.

2.- THE SYSTEM OUTLINE

The visualization of an image (an ionogram in this case), stored in the memory of a minicomputer, over a TV monitor requires a matching between the rate with which the minicomputer can supply the stored data and the refreshing rate of the monitor itself. For this reason a standard 625 lines/frame TV monitor cannot be refreshed directly by a minicomputer which is by itself too slow. At the IEN, a superseded system used a 200 lines/frame videotelephone monitor which was directly refreshable by the computer, through a DMA interface, because of its low horizontal deflection rate [2,3]. This system was definitely unsatisfactory since not only utilizing a monitor outside the CCIR standards, hence almost unreplaceable in case of failure, but also implying an exceedingly large occupation of the central memory for the storage of the ionogram, which on the other hand, was needed for the planned complete automation of the ionogram's processing. Therefore, a device capable of memorizing a complete ionogram, namely a matrix of 256x128 points of 8 bits each, and at the same time, of displaying it on a standard 625 lines/frame TV monitor was designed and developed.

The block diagram of fig. 1 helps the understanding of this set up in its details. The minicomputer DIGITAL PDP 11/15 can accept, via the DR11-C interface, sequences of data corresponding to the columns (i.e. frequencies) of the ionogram's matrix, supplied either by one of the two magnetic tape recorders - 2 and 3 in fig. 1 - or, in real time, directly by the ionosonde 1, and memorize them, via the DMA interface (DR11-B) and the Control Unit 5, into the External Memory 6. The content of the External Memory is continuously visualized on the standard TV monitor. Furthermore, the Control Unit can display and move over the entire screen of the monitor, under commands coming from the computer, a flashing pointer and a so called "transmission curve", which are used for extracting the ionospheric characteristics respectively

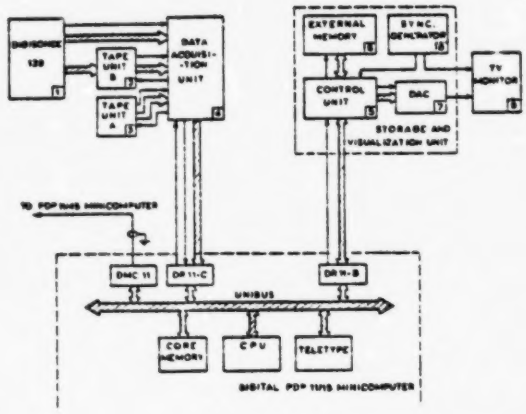

Fig. 1 Block diagram of the system.

as the coordinates of the pointer (heights and frequencies) and the position of the curve (MUF). These readings are memorized into a magnetic disk unit carried by the DIGITAL PDP 11/45 minicomputer of the neighboring "Centro di Studio per la Televisione del CNR" which is linked to the DIGITAL PDP 11/15 via two DMC 11 interfaces. Moreover, the PDP 11/45 can use the External Memory through that link as one of its peripherals. This way the elaboration programs can be first developed and tested on the more powerful "45" and then utilized on the "15".

3.- THE STORAGE AND VISUALIZATION UNIT

The image (ionogram) that must be visualized on the monitor (fig. 3) is a matrix of 256x128 points of 8 bits each. In order to obtain the most efficient occupation of the monitor's screen, each elementary area of the image has been chosen to be a square two-line high (i.e. equal fields) and 166.6 ns wide (6 MHz clock). The remaining portion of the screen has been left available for the visualization of the alphanumeric characters which are needed for displaying the information pertinent to each ionogram like the date, hour and so on, and concerning the actual position of the pointer and the other readings. The ionogram memory was subdivided into 4 subunits operating in parallel to avoid the need of using memory chips of too high ratings. Hence, the cycle time required during the visualization is 666.6 ns: it can be achieved quite easily by means of the commercially available LSI circuits.

The details of this interface are described with reference to fig. 2. During normal operation (continuous refreshing) the memory is available to the computer in the interval of time between successive video refreshings, i.e. during 11.8 ms

out of the 20 ms of the field scansion. By the way, the visualization can be interrupted and the connection of the memory to the computer maintained, if necessary. During the 11.8 ms, the computer can read or modify the memory content by loading the I/O Address Counter [4] of fig. 2 - with the starting address of the string of data to be transferred by DMA, and utilizing the Control and Status Register of the DR11-B in order to communicate to the Control Unit [1] the desired operations: reading or writing, by rows or by columns. Under the action of the Control Unit the bytes of information are transferred by DMA between the computer memory and the externa memory [5-8]. During the 8.2 ms of the TV Monitor refreshing the Control Unit interrupts every DMA cycle eventually in progress and puts on the Address Bus the content of the Refresh Address Counter [3]. The remaining DMA cycles are performed after the visualization of the 128th row. The end of the transfer is reported to the Control Unit by the READY signal from the DR11-B.

3.1 - Memory I/O and TV Refresh

Every write operation of the memory consists of the memorization of a 32-bit word. This word is built up in the I/O Buffers [9,10] latching two sequential 16-bit words supplied by the DR11-B and is stored into the external memory subunits Ma through Md, as follows.
First word (word A): low byte in Ma, high byte in Mc;
Second word (word B): low byte in Mb, high byte in Md.

In a similar way, following a memory read operation, a 32-bit word is available on the memory output terminals. The two 16-bit words A and B to be sequentially fed into the DR11-B for their transmission to the computer memory, are obtained at the output of the I/O Buffers, latching first the content of Ma and Mc and then the content of Mb and Md. Hence, it follows that a write or read cycle is performed every two DMA cycles. For this same reason, the content of the I/O Address Counter, that is the address on the Address Bus, must be incremented only every two DMA cycles.

The TV Monitor refreshing is similar to the output operation described above, except that the address on the Address Bus is supplied by the Refresh Address Counter [3] and that the words A and B are further serialized by the Output Multiplexer [15]. As a result, for each address on the Address Bus, 4 bytes of 8 bits each are sequentially fed to the DA Converter [16] and displayed as 4 subsequent ionogram points on the TV Monitor [17].

3.2 - Pointer and Transmission Curve

As stated in Section 2, a flashing pointer and a curve (transmission curve), movable over the entire screen, are needed for the semiautomatic reading of the ionospheric data. This task is accomplished without modifying the content of the external memory as follows. To display and move the pointer, the computer loads the pointer address into the Pointer Position Latch [11]. When this address and the address on the Address Bus are equal the number on the output of the Console Switch Decoder [18] is fed into the DAC [16], instead of the actual ionogram point value. This number alternates between 0 and a value N with a frequency F. N and F are selected by the Console Switches [19].

On the other hand, the 127 column addresses of the transmission curve are stored in place of the last column of the ionogram that, during the visualization of the curve itself, is not displayed. In other words, the 256th byte of each row, istead of being displayed, is stored into the Curve Point Position Latch [13] and represents the address of the point of the curve for the following row. The curve grey level is again selected by the Console Switches.

3.3 - Character Generator

Together with the ionogram, the alphanumeric information is visualized on the TV Monitor, which then can be used as the output terminal of the computer as well.

The PDP 11/15 transmits the position and the ASCII code of each character to be visualized, to the interface that stores such an information in the Character Memory [21]. The 36 strings of 52 character each, contained in such a memory, are automatically visualized over the screens zones free from the ionogram.

4.- CONCLUSION

The apparatus described in the preceeding Sections is actually in operation at the ionospheric station of the IEN. It proved to be quite useful not only for the semiautomatic reading of the ionospheric characteristics, but also for allowing several elaborations of these data. Such elaborations are performed in order to eliminate disturbances and interferences from radio stations which hinder the correct interpretation of the ionograms, especially in the automatic approach. The results obtained with this apparatus - see figs. 4 and 5 - are rather promising [4]

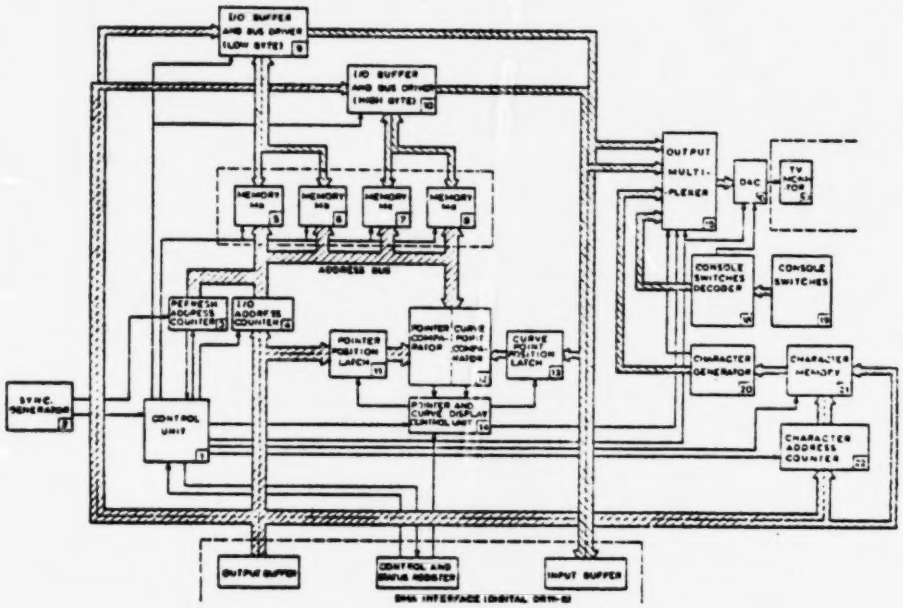

Fig. 2 - Block diagram of the storage and visualization unit.

and will lead, in the near future, to the completely automatic reading of the inospheric characteristics. This goal, which is in the auspices of all the operators who are monotonously and tediously dealing with the cumbersome collection of ionograms, will be a most welcome achievement. Indeed, once the routine of manual analysis will turn out to be obsolete the still hidden information contained in the ionograms rejected by the computer on account of their anomalous complexity will come to full evidence and will ask for further studies.

Acknowledgment

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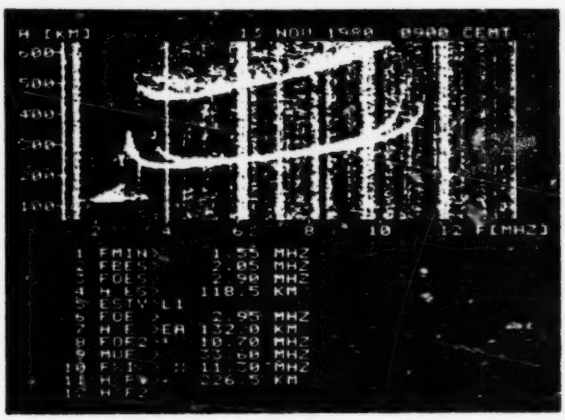

Fig. 3 - Picture of the TV monitor screen showing a typical ionogram and alphanumeric information display.

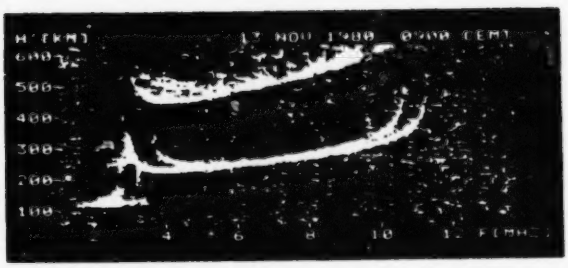

Fig. 4 - Digital processing on the ionogram of fig. 3 showing the suppression of the interference from radio stations.

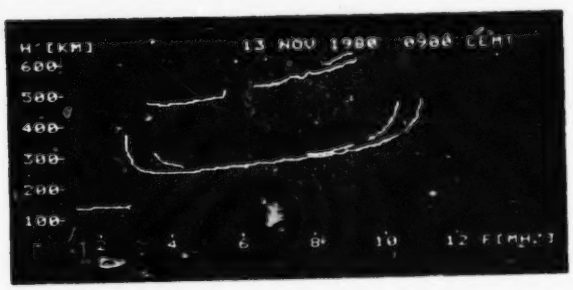

Fig. 5 - Skeletonization of the ionogram of fig. 3 by using a digital convolution filter.

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4 September 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 180

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TELECOM BUILDING NEW MICROWAVE LINK IN NORTHERN TERRITORY

Canberra THE AUSTRALIAN in English 16 Jul 81 p 31

[Text]

THE Northern Territory will benefit from a new microwave link being built in western Queensland by Telecom.

The $9 million Roma to Hughenden microwave project will link into the Townsville-Mount Isa-Darwin system, providing an alternative 1800-channel route for telecommunications between Darwin and eastern Australia.

STATIONS

In the event of a breakdown in the coastal communications network in Queensland, Darwin communications could be diverted from Hughenden to Roma and on to Brisbane and other centres.

It would also enable the network to cope with much heavier use to and from Darwin, and provide facilities for non-priority television transmission.

Telecom expects to complete the Roma to Hughenden link in about two years.

Working north from Roma, 25 microwave towers and repeater stations will be built along the 1200km route through remote country.

Teams of Telecom radio linemen installing foundations for the towers have reached Blackall, about the halfway mark.

The first five guide masts, between Roma and Charleville, have been erected and installation of antennaes will start soon.

The equipment buildings, to be located at each repeater site, are being fitted out before being transported to destinations.

Telecom anticipates the Roma-Charleville stage will be completed by about February, reaching Blackall by July, Longreach about the end of next year and finally Hughenden about the middle of 1983.

This microwave system will provide much of the basic structure for automation of the telephone network in a large part of outback Queensland, a program Telecom aims to achieve by 1990.

Microwave technology has brought most Australians, irrespective of where they live, in touch through the telephone and has been a major factor in the growing use of telecommunications.

In April Telecom connected its five-millionth telephone service in Australia, an increase of 1.3 million customers in just under five years.

NEW TOWNS

Resources development in northern Australia, requiring sophisticated communications, is taking Telecom into sparsely populated areas to meet the needs of industries and towns springing up virtually overnight.

The Roma-Hughenden microwave system will play a key part in this, along with similar systems which are stretching to the north, west and centre of the continent.

CSO: 5500/7544

NEW INTELSAT IV OPTION OPEN FOR TV IN THE OUTBACK

Canberra THE AUSTRALIAN in English 16 Jul 81 p 30

[Text]

PEOPLE in the outback who have waited nearly 25 years longer than most Australians for television, can now tune into the ABC. But the price is high.

The Telesat outback satellite system installed by Hills Industries Limited, has just gone on the market with a price tag of about $7000.

Telesat, the first commercial system to bring television within reach of hundreds of thousands of people in the outback, will pick up signals from the international communications satellite, Intelsat IV.

The only other systems capable of receiving satellite transmissions in Australia at present are Telecom and OTC receiving stations, using large dish antennas which cost between $50,000 and $100,000 each and provide television reception only within a 35km radius.

The Federal Government will eventually establish 52 of the receiving stations, but Hills' managing director, Mr Bob Ling, says Telesat offers the advantage of being available now.

"If and when an Australian satellite is put into orbit, we expect the Telesat system can be modified to suit," he said.

The system was designed in Perth by an American communications scientist, Professor Taylor Howard of Stanford University, exclusively for Perth-based Australian Microwave Systems.

STANDARD

Professor Howard has been involved with space research for 16 years and is the leader of the NASA Mariner Venus Mercury celestial mechanics and radio-science team.

His Hills Telesat system is the first of its type to be marketed and installed commercially anywhere in the world.

It consists of a five-metre-square curved screen which reflects microwave transmissions of ABC television from Intelsat IV into a collecting horn about seven metres away.

Signals are then amplified, modulated and converted to a lower frequency by a converter unit and fed by co-axial cable to a tunable receiver which plugs into any standard color television set.

The "footprint" of Intelsat IV covers most of Western Australia, South Australia, the Northern Territory, western Queensland and part of NSW.

ABC television programs can be received from Sydney and Perth, and the picture quality in the central area of the footprint is claimed by Hills to be as good as in the average suburban home.

The central area covers roughly an oval which includes Mount Isa Kalgoorlie, Tennant Creek, Alice Springs, Oodnadatta and Coober Pedy.

Centres in the fringe reception area include Townsville, Tom Price, Port Hedland, Broken Hill and Darwin.

Hills is confident the system will be well-received by outback customers.

CSO: 3500/7544

BRIEFS

INTELSAT SERVICES STUDY--A study to examine and assess the demand for a growing range of domestic satellite services has been launched by Intelsat. The broad-ranging study will also identify how Intelsat could meet the requirements through dedicated and/or share use satellites. Two thirds of the world's overseas public international telephone and telex services and virtually all overseas television relays are carried on a network of Intelsat IV and IV-A satellites. [Text] [Canberra THE AUSTRALIAN in English 13 Jul 81 p 19]

TELECOM NETWORK ANALYSIS--Control Data has won a contract from Telecom for development and processing of network analysis systems. The company has handled this work in the past, and the latest Telecom decision will mean a five year extension to its earlier contract, which is worth $2.5 million. It will enable Telecom to continue to develop a network analysis project, used in planning needs in the Australian telecommunications network. The contract also allows Telecom to have access to Control Data's Cybernet time-sharing network, based at the company's new computing centre at Knox. In a prepared statement, Control Data's managing director, Mr John De Beer, said the latest agreement was "an affirmation of the ability of control Data services to supplement existing in-house computing resources in areas where specialised projects and applications are involved." [Text] [Melbourne THE AGE in English 21 Jul 81 p 33]

CSO: 5500/7544

BRIEFS

NORDIC SATELLITE COMMUNICATIONS EXPANDED--Antenna No 2 at the Nordic satellite earth station at Tanum is now ready for operation, opening the way for automatic dialing to Iceland via this installation on the coast of Bohuslan [Sweden]. Norway opened direct dialing communication with Iceland on 1 March of this year, but up until now this traffic has been routed via an earth station in West Germany. With operation of the new antenna at Tanum the number of telephone connections via satellite to the United States will be substantially increased. There will be a total of 500 telephone channels to the United States via the two antennas. The Tanum station also connects with South America and Africa. Total capacity is 864 channels, i.e. the total number of simultaneous conversations possible. Norway is gaining direct dialing connections with an increasing number of countries. As of today, there is automatic connection with 64 countries, 32 of them outside Europe. Among European countries, only Romania, Bulgaria, and Albania cannot be dialed directly, and by 1983 only Albania will remain. By next year there will be direct dialing too, among others, Malaysia, Egypt, Saudi Arabia, Sri Lanka, and Nigeria. The Telecommunications Administration will in time open direct dialing to the entire world, but no time schedule for this has been set. [Text] [Oslo AFTENPOSTEN in Norwegian 3 Aug 81 p 10] 11,256

CSO: 5500/2286

NEW TELEVISION TOWERS DESCRIBED

Sofia IMPULS in Bulgarian 7 Jul 81 p 1

[Text] Engineer Iv. Antakhtov from IPP [Institute for Exploration and Designing] Isproekt shared some thoughts about trends in radio and television building in our country. The rapid development of radio and television in the last 2 decades has posed urgent and above all responsible tasks of a most varied nature before the Engineering Economic Organization. Thirty radio relay stations had to be not only designed, but also built. Ten of them are of the tower type with a mixed purpose. Ten radio and television towers were designed and there is a trend toward speedy construction.

Besides their immediate purpose, broadcasting of radio and television programs, these towers became the most important project of the Ministry of Communications, namely the automation of telephone communications between the okrug towns in the country: AMTOG.

The acquired experience in designing and building the television tower on the Snezhanka peak in the Rhodopes made it possible for the designers and builders to improve further and make cheaper the design of the Ruse television tower, which was rather expensive, difficult to execute, and somewhat lacking in technological sense design. This forced the Isproekt designers and the builders from the building administration [Transtroy] in Ruse to suggest a technologically satisfying and comparatively easily executed design.

The experiment was completely successful.

The television tower in Ruse is 200 meters high and it will actually be the biggest installation of this type, not only in our country, but also in the Balkans. For the first time in Europe the foundations for a thin, tower-like building with the already mentioned height are laid in very poor subsoil conditions (the terrain under the tower is loess). The television tower erected in the locality of Leventa on the axis of Georgi Dimitrov Boulevard will broadcast at first two television programs and will have the capacity to broadcast five television programs in ultra short waves, including one stereo program; it will connect our television with different parts of the world as well as with outer space. Passengers in motor vehicles or trains in a radius of 100 km will be able to make a telephone call to any settlement in the country.

Similar radio-television equipment designed and executed by the departments of ISO [Engineering economic organization] Telekomplekt are already built in Silistra, Belogradchik, Tolbukhin, Razgrad, Tutrakan and other places.

On top of Orelek Peak in the majestic and inaccessible Pirin, at an altitude of more than 2,000 meters, a modern radio-television tower with completely automated controls of the operational processes is under construction. It will cover the whole of Southwestern Bulgaria with television and ultra-short wave programs.

The television tower on Vitosha Mountain, which is under rapid construction, was designed by IPP Isproekt.

The Soviet candidate of technical sciences, Professor Korenev, who recently visited the project, highly appraised the creative audacity of the designers.

The workers and employees of the institute for exploration and designing meet the holiday of the building workers with the proud feeling that they have fulfilled their duty to the radio-television construction in our fatherland, in the designing of which they have invested a part of themselves.

Model of Television Tower in Ruse

9804
CSO: 5500/3021

ENTEL TEN-YEAR PROGRAM FOR EXPANSION, MODERNIZATION DISCUSSED

Buenos Aires MERCADO in Spanish 25 Jun 81 pp 30-31, 34-39

[Text] Argentina is behind the times in the field of telecommunications. In recent decades, the world has witnessed considerable advances in telephone, telex, mail and telegraph services, whereas Argentina has practically stood still. For example, it is worth noting that a telephone exchange becomes obsolete after 30 years of operation and many domestic exchanges have been in use for nearly 50 years. Five years ago, the Undersecretariat for Communications embarked on a series of projects to reverse this situation. The results are already visible, but a long road still lies ahead. The renovation, expansion and modernization of telephone equipment represents a real challenge for the government; more than 500,000 lines were installed in the last few years and contracts for the installation of 660,000 more lines using an electronic system have already been provisionally awarded to three companies--Standard Electric, Siemens and Pecom-NEC.

This latter program alone will mean an outlay of almost $190 million, which clearly illustrates the high cost of telecommunications technology. Although there are no doubts concerning the priority of modernizing the sector, the present economic situation and the goals of reducing public spending constitute an obstacle to the implementation of the projects underway.

The telephone system has made notable progress in recent years, although it has still not satisfied the expectations of the domestic market. There are approximately 2.2 million lines in use at the present time. Of this total, 980,000 are controlled by an antiquated life-and-turn switching system, 1.900 million by electromechanical systems employing crossed bars and high-speed rotors, and 30,000 recently installed lines use a semielectronic system. In general, when a telephone exchange has been in operation for more than 30 years, it has exceeded its useful life and becomes obsolete. At the present time in Argentina, more than 320,000 lines have been in use for nearly 50 years and about 165,000 have been operating for 30 to 40 years. There is also an unsatisfied demand for approximately 1 million lines, but this level may be higher, since as General Corrado himself pointed out, there is a potential demand which is unconfirmed due to the problems of filling the most immediate orders. According to government officials, by the end of the decade the number of lines in use will have increased to 2.800 million, which will make a total of approximately 5 million.

The two traditional suppliers of electromechanical equipment, Siemens-Equitel and Standard Electric, are currently carrying out a program for the supply of telephone equipment. This program will be completed in 1982 and about 300,000 lines remain to be installed. The most important news in recent months has been the provisional awarding of contracts for the installation of 660,000 lines using the "Stored-Program Control" or CPA system to these two companies and Pecom-NEC. This program will mean an investment of approximately $190 million and it is estimated that it can be completed by 1984. Of the 660,000 lines provisionally contracted, more than 50 percent (360,000) will be installed by Pecom-NEC and the remaining 300,000 will be divided equally between Siemens and Standard Electric.

The equipment will be imported in an initial stage and, once in operation, all of the parts for the semielectronic exchanges will be produced within the country. In the case of Pecom-NEC, the proportion may be 55,000 lines imported and 305,000 produced domestically. "Pecom-NEC is working to quickly put its plants into operation," Pecom-NEC General Manager Angel De Giorgi pointed out, "but it is a process which must unavoidably include certain stages, beginning with a national assembly system, that is, the unassembled equipment is brought in and then assembled, tested and put into operation; similarly, our technicians must be trained in this new technology, which also requires a certain amount of time."

But the longer that final contracting is delayed, the more limited a nationally integrated system will be. As Standard Electric's public relations director Jorge Dengis points out, domestic integration is necessarily determined on the basis of the time of delivery; the estimated time for putting the Argentine plants into operation is reduced according to the extent that the final contracts are not formalized.

Electronic exchanges have been in use for years in developed countries and have the same features as those to be installed in Argentina. "This is a clear illustration that the type of technology to be used is of a very high level and proven success," Pecom-NEC's Carlos Ripetta added. "Several million lines have been installed and their operation is excellent." The new exchanges cover the entire country; in a preliminary subdivision process, the northwest was assigned to Standard Electric, the northeast (Chaco, Formosa, Santa Fe and part of Mesopotamia) to NEC and Buenos Aires Province and Patagonia to Siemens. The Cuyo region and Entre Rios, excluded from this assignment, would remain under the control of the Argentine Telephone Company and the Entre Rios Telephone Company, respectively (with regard to the former, see the report published in the financial section of this same issue).

In principle, the projects will start in the city of Buenos Aires, beginning with the downtown section and followed by the central area and suburbs. They will consist of renovating and enlarging exchanges; renovation is the most important task in the immediate future, as there are exchanges which are almost 50 years old and the obsolescence of some equipment is alarming. According to De Giorgi, present exchanges with about 10,000 subscribers can be enlarged to handle 40,000, i.e., an increase of 400 percent for the present telephone plant. An additional volume of 880,000 lines could be expected by the end of the decade and the oldest exchanges could not be more than 25 years old.

Under the CPA system, exchanges will introduce startling innovations in communications. Since computers will be handling such calls, communications possibilities will be expanded at the same time that new operations are being performed: for example, calling

another predetermined subscriber by dialing only one or two digits (i.e., there will be a memory for numbers used most often); calling one's own number automatically at a certain hour (wake-up service); the possibility of one subscriber communicating with another predetermined subscriber by merely lifting the microtelephone without performing any additional operation on his telephone set (direct call); limiting communications to the urban or interurban area; or any combination of such innovations, depending on individual needs (blocking of long-distance calls), and other services such as telephone orders or transfers. "Along with this equipment and its amazing possibilities, of course, other key sectors of the area must also work, such as the digital communications system," Dengis emphasized.

With regard to digital communications, officials of the Undersecretariat for Communications have reported that the projects are being completed within the deadlines set and that the results of this new system will soon be visible. Communications routed through the three new traffic centers, Munro, Monte Chingolo and Ramos Majia, will greatly improve service, mainly for subscribers in the urban area. These projects are being carried out at the same time that the present automatic exchanges of Belgrano, Flores and Barracas are being replaced, forming a network of six switching centers.

Although the telephone sector is the form of telecommunications most urgently in need, other aspects also require the renovation of equipment and, in some cases, the incorporation of new technology. One informal agreement, among others, has been signed for the supply and installation of an undersea cable to connect the cities of Lagos (Portugal), Dakar (Senegal) and Recife (Brazil). Operation of this communications link will be assigned to an international consortium including Argentina, Brazil, Senegal, Ivory Coast, FRG, Italy, France, Switzerland, Great Britain and Portugal. The agreement will be formalized sometime this year and will make it pos possible to expand international services considerably. ENTEL [National Telecommunications Company] is in turn planning to install a public international facsimile system and to establish the bases for its use in Argentina. At the same time, a study is also being conducted for putting into operation an experimental optical-fiber link to route telephone traffic between the Burzaco and Adrogue exchanges.

With regard to telex communications, a modernization plan is being studied for the installation of 40 exchanges over the next 3 years. In another area, ENCOTEL [National Mail and Telegraph Company] is incorporating new postal mechanization systems for handling mail of nonstandard format, or printed matter in general, as well as for international formats, which will be processed in the Retiro International Postal Center. The installation of automatic postage vending machines will soon get underway, making it possible to purchase stamps when post offices are closed. In these new branch offices, users will be able to purchase stamps and mail their letters without the assistance of ENCOTEL personnel.

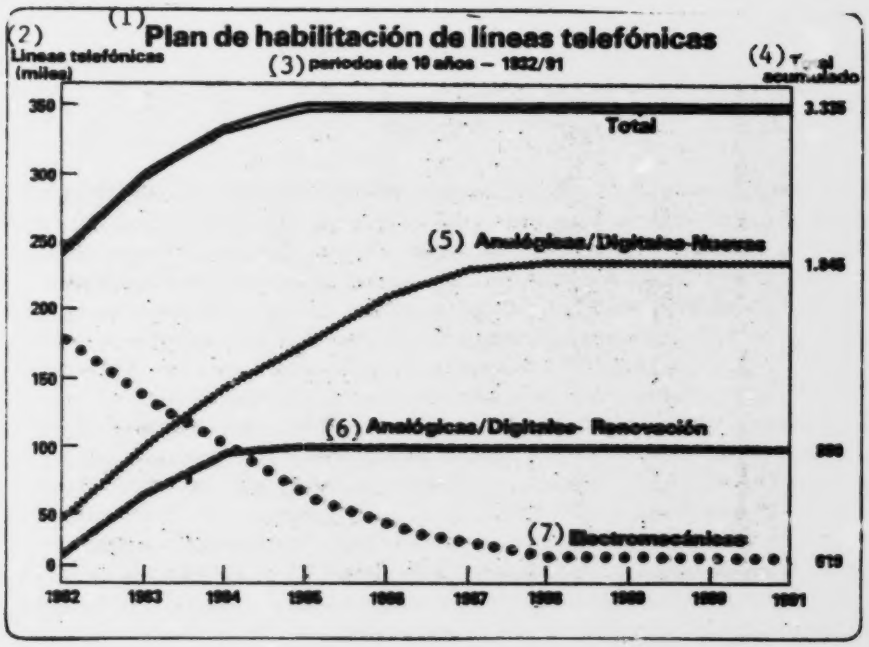
An interdisciplinary committee, including representatives of the three armed services, is studying the usefulness and advisability of implementing a national satellite communications system. Studies have been underway since 1979 and one of their first results is the Sovereignty Plan which, with ENTEL's assistance, provides a model ground infrastructure for using the INTELSAT [International Telecommunications Satellite Organization] V satellite. However, as General Corrado emphasized several days ago, INTELSAT's use is independent of the communications system, since the latter

will be operated and administered exclusively by Argentina. Although no date has been set for its inauguration, it is estimated that the system can be put into operation before the end of the decade.

The projects underway are undoubtedly a good sign that the country is getting in step with the rest of the world in the field of telecommunications. But the renovation, modernization and expansion of equipment entail considerable expenditures and at present the government's aim is to reduce public spending as much as possible. As stated, the installation program for 660,000 lines using electronic exchanges will mean an outlay of approximately $190 million; although it has been reported that this amount of debt would be controlable, it is certain that ENTEL would have a liability of $350 million. The Ministry of Economy recently stated that "government investments would be relativized, while respecting the priorities of projects in progress." This would not represent an obstacle to the telephone modernization program mentioned previously, but what will happen to the rest of the projects which the Undersecretariat for Communications wants to carry out? The latest devaluations will also have their impact, since many of the new telecommunications systems will be entirely imported.

Perhaps one solution--which has been mentioned repeatedly in private and government circles--is for some services to be privately owned. Economic officials themselves have pledged to speed up peripheral private ownership of ENTEL, the Public Data Communications Network (which would amount to about $22 million), the Data Bank System and maintenance services for the regional links and new exchanges which ENTEL has planned to provide in the near future. However, some directors of private companies in the sector have voiced their concern over the delay in making decisions which would speed up the accomplishment of these goals and reduce the "extra" problems caused by such delays.

It is certain that the more the country puts off developing its telecommunications systems, the more problems it will have in becoming part of a world that is growing rapidly throughout that area. Thus the effort entails being able to successfully combine the sector's objectives and the country's economic reality, which will mean achieving a perfect balance.



Key:

1. Plan for Supply of Telephone Lines
2. Telephone lines (thousands)
3. 10-year periods--1982/91
4. Cumulative Total
5. Analog/Digital--new
6. Analog/Digital--renovation
7. Electromechanical

11915
CSO: 5500/2255

RADIO HABANA CUBA BROADCASTS TO FISHING FLEETS

Havana MAR Y PESCA in Spanish May 81 pp 34-35

[Interview with Radio Habana Cuba program director Orlando Castellanos by Jorge Julio Gonzalez: "Twenty Years of Radio Habana Cuba: On the Seas of the World"; date and place not given]

[Text] "This program is especially dedicated to Cuban fishermen and members of the merchant marine, to seamen and fishermen all over the world and to all listeners tuned to Radio Habana Cuba...."

This is how "Cuba on the Seas of the World," a radio program that is winning the affection of the crews of our fleets, begins each week. For 13 minutes the message from the yearned-for fatherland reaches them through interviews with comrades in the business and relatives, news items and various topics having to do with their occupations.

But do you know, dear listener, how the idea for this program came into being, how it was put together? For these details we have to go to the other end of the receiver, where Radio Habana Cuba's program for seamen is generated.

The Hunted Hunter

Orlando Castellanos has hundreds of interviews to his credit as an experienced jounalist, many of them as director of "Cuba on the Seas of the World." Perhaps this is why he seems to be so nervous now that he himself is faced with questions:

[Question] Orlando, one of the reasons for our visit to Radio Habana Cuba is precisely because now, this May, the station is 20 years old. Could you sum up for us the significance of this great effort?

[Answer] Radio Habana Cuba's basic task, and also its great merit, is to contribute to bringing the truth about the Cuban revolution to the world. For these 20 years the station has been an effective weapon in the battle Cuba is waging against imperialism in the domain of ideas. To give you an idea of the size of this effort, I tell you that at the present time its programs are broadcast in eight languages on a high political, ideological and professional level, often simultaneously, and comprise 66 hours and 10 minutes of broadcast time a day.

[Question] Cuban seamen know very well, Orlando, what it means to be separated from the land of their birth for months on end. As you know, on the high seas any news from home in a real event. Now how does this fact tie in with the work engaged in by Radio Habana Cuba?

[Answer] Our files jealously guard a letter dated in May 1961, a few days after the station officially went on the air, that speaks for itself in connection with that. The letter in question came from Rotterdam, Netherlands, and was signed by Miguel A. Binelo, the radiotelegrapher of the Cuban motorship, Las Villas. In it, word for word, Binelo reports: "When our ship was north of the Azores on 1 May of this year, we listened to the description of the International Workers Day celebration from the beginning in the early hours of the morning until the end during the night.... We can assure you that the 17 ships of our fleet, which are at present sailing all the seas of the world, daily listen to Radio Habana Cuba."

[Question] This is without a doubt a historic document.

[Answer] I need hardly tell you that this letter and others like it were behind the creation of a program especially dedicated to the men of the sea. First, a program was beamed to members of the merchant marine, one which was broadcast from 1962 to 1971. Then there was a digression. But now, since the end of 1980, we have begun to broadcast the program again on a more extensive scale, one which includes fishermen as well.

[Question] And what about the future of "Cuba on the Seas of the World"?

[Answer] Our plans are to increase contact between seamen and their relatives on land since this is a program line that has been very popular. We are also going to begin to establish communication with some ships at sea, then later play the tapes back on the program. And lastly in our planning we will constantly strive to achieve the quality that all our workers at sea deserve.

"Cuba on the Seas of the World" Program Schedule
(until September 1981)

Broadcasts for North, Central and South America and the Caribbean

Sunday 0630 (EST)		
16m 17,705 kHz	16m 17,750 kHz	19m 15,230 kHz
25m 11,760 kHz	31m 9,550 kHz	31m 9,770 kHz
Sunday 1103 (EST)		
16m 17,705 kHz	16m 17,750 kHz	19m 15,230 kHz
25m 11,760 kHz	31m 9,550 kHz	31m 9,770 kHz
Sunday 1730 (EST)		
25m 11,970 kHz	25m 11,760 kHz	31m 9,770 kHz
Monday 1400 (EST)		
16m 17,750 kHz	31m 9,770 kHz	

African Area

Sunday 1345 (EST)
16m 17,705 kHz 19m 15,385 kHz

Mediterranean Area

Sunday 1445 (EST)
16m 17,710 kHz 19m 15,230 kHz

Monday 0445 (EST)
19m 15,230 kHz

("The Voice of Cuba" is also on the air Mondays at 0200 hours on the frequencies used by Radio Liberacion and Radio Rebelde.)

11,466
CSO: 5500/2282

DETAILS ON CCCE AID FOR THOMSON PROJECT GIVEN

Tananarive MADAGASCAR-MATIN in French 21 Jul 81 pp 1, 2

[Text] TELECOM-Sud-Est will be the most modern network in Africa and one of the most modern in the world.

But before it becomes operational, and in order to ask for the blessing of the Zanahary and the Razanas, a "joro' ceremony was celebrated Saturday morning at the Tolagnaro posts and telecommunications offices before the erection of the towers and the installation of the antennas necessary to the project.

Among those on hand were CSR [Supreme Revolutionary Council] members Marojama Razanabahiny, Jean de Dieu Randriantanany, Max Marson; the minister of foreign affairs, Christian Remi Richard; the head of the Central Fund for Economic Cooperation [CCCE] (France), Manuel Bridier; the DGA [expansion unknown] of Thomson DHF, Coffinet, along with some of the company's technical engineers, respresentatives from the ministries of PTT [posts, telegraphs, and telecommunications] and information... as well as elected officials.

CSR member Marojama Razanabahiny, president of the infrastructure committee, in a short speech, put the emphasis on the cooperation which should be inaugurated between friendly countries. He thanked both CCCE, which originated this project, as well as the French and Malagasy technicians who have worked on it, for, he said, "no one thought that towers would be built in this formerly outcast region that was forced to live in autarky. This means hope for the inhabitants, he concluded, because they are going to be in the vanguard of international communications."

Construction of the TELECOM-Sud-Est project, which is being carried out by the Thomson company, is to cost 5.5 billion Malagasy francs. According to Mr Coffinet, this is one of the biggest wireless beam projects in the world, for its range is over 1,400 km (Fianarantsoa, Manakara, Farafangana, Mananjary, Tolagnaro) with 45 stations, and covers both television and telecommunications with the most modern equipment. The project also is to result in a reduction of energy costs (fuel and oil), as in various locations these combustibles will be replaced by solar energy.

The "joro" which took place last Saturday marks the end of the civil engineering phase of the work. Very soon the technicians are going to erect the towers (40 meters high at Tolagnaro) and the antennas, which will be done by the end of the year. And toward the end of the first half of 1982, the Fianarantsoa-Tolagnaro

link will be completed, to be joined 3 months later with Toliara, in order to grid the southern region (we note that TELECOM-Sud recently went into operation).

Still according to the Thomson DFH DGA, TELECOM-Sud-Est is a very economical operation: its reliability is very high, as it is only predicted to break down once every...30 years. That is to say that the operation and maintenance of the project are very economical.

9516
CSO; 5500/5060

SOVIET AID TO IMPROVE RADIO RECEPTION REPORTED

Tananarive MADAGASCAR-MATIN in French 31 Jul 81 pp 1, 2

[Text] "This is Malagasy Radio and Television [RTM] broadcasting from Imerintsiatosika."

For 20 minutes yesterday morning RTM listerners were able to listen to a direct broadcast from Imerintsiatosika, on the 433-meter band, as the medium-wave broadcasting center which is the result of Soviet-Malagasy cooperation amounting to FMG 500 million was officially opened. The actual inauguration was preceded by a tour of the facilities, the diesel equipment room, the 238-meter high transmitting tower, the main building where the studio and airing take place, as well as the broadcasting room where the official ceremony took place.

A rather short ceremony, moreover, because the Soviet delegation had to return shortly afterward to Ivato airport as they ended their visit to Madagascar.

After the national anthems of our two countries, speeches were made in turn by the Presicomex of the Arivonimamo fivonaronana, by the Soviet vice-president of the state committee for external economic relations, and by the minister of information, ideological motivation, and relations with Georges Ruphin institutions.

Meaningful Words

The Presicomex of Arivonimamo expressed the great pleasure of the people of the fivondronana at seeing the installation at Imerintsiatosika of this station "which is an instrument in the service of the Malagasy socialist revolution and the fruit of Soviet-Malagasy cooperation." He said that for us collaboration is not an empty word.

This station, he emphasized, will also encourage our two peoples to become closer, and will also bring closer together the people of the big cities and the rural world. And he expressed his thanks to the revolutionary regime.

Instrument of Peace

The Soviet vice-president for his part spoke of the importance of the Imerintsiatosika station, which is the fruit of Soviet-Malagasy cooperation and which is an instrument for peace.

All the equipment of this medium-wave broadcasting station was dispatched to Madagascar in record time. Its 238-meter tower with 150 kW power will provide high-quality broadcast reception over the entire extent of Malagasy territory.

After having mentioned the role of radio as a mass media, the Soviet vice-president asserted that it was a powerful weapon for motivating people.

From now on, he said, the world will know the truth about Madagascar and the Malagasy people will be more abreast of the international situation.

He expressed the hope that this equipment, put at the disposal of the Malagasy revolution and the people, which was installed with the help of the good cooperative efforts of the Soviet and Malagasy technicians, will fulfill its expectations.

Historic Site

Minister Georges Ruphin, representing the revolutionary regime, expressed his personal pleasure at seeing the Soviet delegation, which had participated in the second meeting of the intergovernmental commission at the end of its visit to Madagascar, at the inaugural ceremony for the medium-wave broadcasting station.

He provided some technical data, mentioning that the broadcasting station, the fruit of Soviet-Malagasy cooperation, had a power output of 150 kW.

This site is of historical note, he said, because while in the past it may have been used for space espionage--which doubtless was of no use to the Malagasy people—now it has become the site of the broadcasting station for the improvement of RTM reception, which has direct impact on the life of the people.

Modern Technology

Must it be recalled, he said, that the signing of the proposal for this project took place in 1976 with the Soviet Institute of State Research? The total cost of the equipment amounted in all to FMG 500 million, and the Malagasy share which provided the civil engineering work, included the EGC [expansion unknown] and SECREN [Naval Construction and Repair Company], under the direction of the "DINIKA" company.

The civil engineering work began in October 1979 and the station has been equipped with the most modern technology. Its great power makes it possible to provide good reception in a radious of more than 250 km during the day, and around 600 km during the night.

Presently, he said, we are busy putting up medium-wave relay stations almost everywhere so that all those who could only receive RTM on short-wave may benefit from good reception and thus better understand revolutionary directives. Thus, he continued, rumors circulating in the streets will no longer grip the people because they will be quickly belied by the factual news given out by the radio that all will be able to hear, and the consciousness-raising of the undecided and bureaucrats who are scarcely interested in the revolution will take place more easily, "to enable us," he said, "to devote ourselves to the building of the socialist paradise."

Also, he continued, thanks to the broadcasting station, ideological motivation will have more impact on the majority of the population.

Speaking to the Soviet delegation, which has just provided the station, he said that this was only the first step for cooperation between our two countries in the field of information, for it will ultimately expand even further. In conclusion, Minister Ruphin asked the decentralized communities to work to defend this revolutionary achievement against the agitations of reactionaries and those with evil intentions.

We note that CSR member Arsene Ratsifehera, the ministers Christian Remi Richard and Gisele Rabesahala, and Ambassadors Leonid Moussatov and Frederic Randriamamounjy were also present at the ceremony.

9516
CSO: 5500/5060

SATELLITE TV TECHNICAL PROGRESS AHEAD OF POLITICS

Bonn RHEINISCHER MERKUR/CHRIST UND WELT in German 19 Jun 81 p 18

[Article by Guenther Roessler, Deutsche Welle technical director and satellite expert for the ARD (Working Pool of FRG Broadcasting Corporations): "Technology Is Faster Than Politics"]

[Text] The imminent introduction of satellite-television is accompanied by a trend similar to that observed several decades ago with the rise of ultrashort wave radio. At that time, when radio sets were still equipped with tubes, ultrashort wave programs had a very short range. The introduction of transistor technology led to ultrashort wave programs with a much greater range. Thus, for example, ultrashort wave programs from the Southwest Broadcasting Station in Baden-Baden are heard clearly in the middle of the listening area for the West German Broadcasting Station in Cologne--a circumstance not at all in line with the original planning.

A parallel trend is now developing for satellite-television. Thus the World Administrative Radio Conference held in Geneva in 1977 accorded each country the right to operate a five-channel radio and television satellite with direct broadcast. (These satellites, which should be ready to operate by the mid-1980's, can broadcast for the first time directly from space to the receivers in each and every home by using new types of roof antennas and transformers--thus without the still customary detour by way of giant ground stations). And although in 1977 the assumption was still prevalent that the transmitting power of each satellite would be just sufficient to allow good reception of its programs in its own country, technology has in the meantime already left this stage behind. For, meanwhile, receiving antennas have been greatly improved. Thus a German television program by satellite could not only be picked up as far away as Ascona or Klagenfurt--as originally thought--but with improved receiving antennas from London to Rome and from France to the Polish border as well, with somewhat diminished quality of course. Naturally, programs from most of the other European countries could likewise be seen in Germany. Satellite programs from eight European countries (Belgium, Germany, England, France, Italy, Luxemburg, the Netherlands, Austria and Switzerland) can be picked up using a parabolic antenna with a diameter of 2 meters. If each of these countries could 1 day actually produce five television programs, then one could receive 40 programs in Germany, and in the Cologne area there would even be 70 satellite programs.

Still, as before, it appears that the FRG will be the first nation to launch one of the new-type television satellites with direct broadcast. The television satellite, developed jointly by Germany and France, is to be sent into space in 1984 aboard a European Ariane-rocket. As an experiment it will transmit on two channels programs for the ARD and the ZDF (Second German Television Program) as well as 16 radio programs on a third channel. Later, in the operational phase, a satellite with a total of five channels is to transmit an additional program for both the ARD and ZDF. The ZDF has already applied to the prime ministers of the German Laender for the right to use a second channel, whereas the ARD is now considering a similar step.

An although the present conventional broadcasting network will continue to exist even after the introduction of satellite-television in the FRG, it is expected that satellite-television will immediately achieve an audience of millions: The approximately 3 to 5 million households now receiving their television programs over cable by means of party antennas can, with the aid of new parabolic antennas, be converted quickly to satellite reception. The post office now demands DM 120 million annually from the ARD and ZDF for using its broadcasting network. But with transmittal by satellite the net costs for the post office would be only about DM 12 million annually for a program.

The question of whether or not an excessive supply of television programs is at all acceptable is not technical, but political and psychological, especially considering that the average time watching television in Germany of a good 2 hours daily is showing a tendency to decline. And although the political, social and economic consequences of the now forthcoming television via satellite and cable are as yet totally undigested, the technicians are already taking another step into the future. Thus a "High Definition System" is presently being deliberated, by which programs will be conjured to home viewing screens with greatly improved image resolution and color as compared with before. In addition, systems are being developed where the sound quality of satellite transmissions is to be adapted to that of the new digital recordings. On the other hand, however, inexpensive radio satellites of the sort needed by developing countries cannot be delivered. The appropriate frequencies for this purpose are already taken.

9746
CSO; 5500/2250

PILOT PROJECTS IN CABLE TELEVISION

Frankfurt/Main FRANKFURTER ALLGEMEINE in German 17 Jul 81 p 4

[Article: "'Sliding Start Into Cable Television. Model Tests in Bavaria/Constitutional Legal Obstacles"]

[Text] Fin. Munich, 16 July--The commission which is preparing for a cable television model test in Munich, on instructions from the Bavarian Land Government, is pressing for speed. The chairman, Professor Witte, hinted to journalists that a pilot project only makes sense if it is completed before the politicians make their decision. Technical preparations require 1 1/2 years. The German Federal Post Office is working closely with the commission and is ready to set up the technical grid required by the "new office" planned by the commission as rapidly as possible.

The commission recommends a "sliding start" and proceeding from an easily realizable proposal at first to a "very demanding" proposal. As a first step it is planned to install the grid on existing common antenna installations and to offer 12 programs which, depending on the age of existing television sets, will be totally or partly received. Consideration is being given to additional reception of Wuerttemberg and Swiss broadcasts, of productions by the movie industry, and of local programs. In the final phase of the pilot project, moreover, it is supposed to be possible to receive certain transmissions "on subscription" as well as newspaper and magazine texts. Following completion of the "technical center," a computer center, the participants are to be able to "intervene actively in the program structure" by making their wishes known and, by individual payment, calling to request certain performances. Because of this "individualization" praised by the commission, a large number of channels is recommended. Witte expressed the view that those who want to determine the value of an action should carry it out and should not disregard it. "We shall take skeptics as well as enthusiasts at their word."

Inasmuch as Bavaria is the only Land in the FRG in which the public legal structure of broadcast institutions is a constitutional matter, the legal problems are particularly significant. Their examination has not been completed. Professor Lerche spoke, however, of "room for action" in which all sorts of possible activities are allowed by the applicable article of the Bavarian Constitution.

On the other hand, the SPD spoke in this connection of "anticipated commercial television." The commission's report confirms fears expressed several times by the Bavarian SPD that the commission perceives its task as a purely technocratic one. It quite apparently asks only what is feasible and not what is desirable. The commission lacks any sort of problem consciousness with regard to the risks of the new media. It considers as self-evident that, "from show to boxing match," everything will be broadcast and that the producers will be allowed to structure their own broadcasts.

5586
CSO: 5500/2270

DISSENSION SLOWS PROGRESS OF CABLE TV

Frankfurt FRANKFURTER ALLGEMEINE in German 21 Jul 81 p 5

[Article: "Disagreements Among the Laender Delay Progress of Cable Pilot Projects."]

[Text] schu. Frankfurt, 20 July--Testing of cable television in four test areas was the most far-reaching recommendation of the telecommunications report submitted by Professor Witte in 1976 to the "Commission for the Setting Up of Technical Communications Systems" formed in 1974. The basic agreement reached by the prime minister concerned with this question on 11 May 1978, for the locations Munich, Dortmund, Berlin and Mannheim/Ludwigshafen, appeared to announce an early realization. Two years later, in November 1980, the prime ministers again confirmed at Kronberg--albeit under changed political conditions--their common and basic resolution, which had been reached unanimously at one time; they went one step further and settled the financing. The citizen is supposed to participate in the costs to the extent of 20 pfennigs, to be levied through the radio fee.

For 1982, as Bavaria has now let it be known, a "sliding entry" into the Munich cable television project will be striven for. The 2-year time-beat intimates a certain constancy in the planning. Nevertheless, in the meantime 5 years have passed since Witte's recommendation. This has changed the initial position. The "cable pilot projects" became "political projects." The question was posed: "Are these tests still required?"

Boerner's Bailout

The first one who "bailed out" of the project in 1976, still in the first stage of discussion, was the Hessian Prime Minister Boerner (SPD). At that time the city of Kassel was mentioned for a limited time as one of the possible locations for cable television tests. The discussions about North German Radio (1978-1980) strengthened the interest of Lower Saxony's Prime Minister Albrecht (CDU) in the so-called new media. He had the "Kronberg resolution" by the prime ministers on the common financing of "pilot projects for cable television" extended by a protocol note "that further radio political decisions of the Lands outside the framework of the pilot projects are not excluded."

Almost at the same time, in Baden-Wuerttemberg Prime Minister Spaeth (CDU) was dissociating himself step by step from the projected Mannheim/Ludwigshafen double test. After initial statements ("I am not getting involved in tnis adventure without

the possibility of getting out of it"), he set up a commission of experts to investigate the media climate in Baden Wuerttemberg; their final report in 1980 resulted in the preparation of their own Land media law. Spaeth's ideas are based on inclusion in the tests of cities and localities which are already cabled. In Ulm, parts of Stuttgart, Tuttlingen and Villingen-Schwenningen broad-band cable installations have already been partially installed. The locality Unterkirnach in the Black Forest is fully cabled. Spaeth wants to take advantage of this situation and more: For the past few days a working group made up of responsible officials of broadcasting installations and newspaper publishers has been preparing plans for joint television and radio transmission.

The cable television tests grew out of two initial situations. The proportional allotment which was the basis for the original distribution between two Laender ruled by the SPD and two by the Union has fallen by the wayside as a result of the changed political situation. The delaying attitude toward future possibilities of the technology has been canceled by its dynamic further development. The Post Office has invested many millions of marks in readying the communications grid; private firms are spending hundreds of millions for this development; nearly 1 billion will be expended in the next few years for new long-distance comminications grids; new and more rapid communications between computers of firms and central data banks as well as the extension of the telephone grid (by 1986 the Post Office expects to have 2 million major telephone connections in the FRG) are being pushed forward; the full cabling of the FRG is likely to, and this is a calculated total sum, cost 60 billion marks. The federal political factor plays a considerable role in extension of the communications grid, even if the radio sovereignty of the Laender appears to be unaffected in the immediate future.

The prime ministers do not want interference in their areas of competence. Their stated wish is to participate in these decisions, to maintain the federative system; there is to be no uniform, inflexibly fixed way into the future of the media; it is to be manifold and individual. The concept is: early carrying out of cable television tests--they should neither be stopped nor halved. The reasons for the early beginning of pilot projects, desired less by the SPD-ruled Laender than those led by the Union, were given at the "Munich Circle," a supranational association for communications research. The tests are in the stage of realization; they will reveal the technical progress and the possible dangers. Professor Witte says: "All four pilot projects have their own characteristics. They are all necessary."

The step from a large-scale traditional common antenna installation to a cable television installation is relatively simple technically: the situation in the FRG is paradoxical: although there are a number of cable television installations, there is no cable television. The economic and legal questions are difficult; of media-political significance is the proliferation of programs which has become technically possible. The principle of balance will not be realized in cable television by making every program balanced in itself. The competition of programs with a well-defined slant confronts such "internal pluralistic" endeavors with an "external pluralistic" factor; the totality of programs in electronic media approximately corresponds to the present situation in the press.

Points of View Brought Closer Together

Opponents of private programs refer to verdicts by the Federal Constitutional Court, insist on staying with the public legal form of organization, and remind us at

the same time that in the past 5 years points of view have been coming closer together. The one side has gradually given up on the so-called "breaking up" of the broadcast monopoly. The other no longer resists with all its might the program proliferation made possible by private sponsors. The formula for the compromise thus becoming delineated is private program sponsors under the roof of a special legal format where overall responsibility lies.

The cable television tests are not limited to the last phase of the laying of coaxial or glass fiber broad-band cables to cover the area. The financing is concerned with equalization among the Laender and the expenditure considered necessary in the test areas. It is concerned with investment costs of the Post Office (which has agreed to lay the remaining required cables), of the equipment industry (which will make its equipment available on time at the beginning of the tests), the program and personnel costs, and the means for accompanying scientific investigations. The costs for the participants, which are stated to be DM 400 per household, with an additional [DM] 5 and--according to the nature of the program schedule--a further DM 13 in monthly fees, will be booked on the credit side, just as advertising is. Costs cannot be recovered if there are 10,000 participants per test area, according to an estimate; the system would become profitable only for 30,000 participants. An extensive silence about the total costs is observed. Figures are blurred, with an exact cost analysis not available. "The cable dime," according to Professor Langenbucher, once a member of the "Commission for the Setting Up of Technical Communications Systems," will not pay for the tests. Consequently, it cannot be assured that new communications techniques will be tested; instead, there would merely be more television and radio programs and not the technical and therewith program content renewal.

The Laender attempt to take this into account in their plans. Most advanced is the Ludwigshafen model, which is supposed to start on 1 January 1983, a year later than Munich. The Landtag in Mainz passed a law for this in November 1980. Private program sponsors can also obtain a program broadcasting license in the planned public body (The Federal Association of German Newspaper Publishers participates with DM 10 million). The proposed program, besides the locally customary television and radio programs to be received, is to have 14 additional television channels for supplementary programs of various sponsors, an "open channel," a technical information exchange via "cable text," video text, screen text, satellite radio, and a return channel; there will be advertising on certain channels within a certain time-limited scope. The uncovered costs are estimated at about DM million; 30,000 households are to participate.

Following a brief look at Cologne and Wuppertal, the Land of North Rhine-Westphalia has decided on a city district of Dortmund with 10,000 households and 37,000 inhabitants as the location for the cable television test; a statute to this effect will be submitted to the Landtag after the summer recess. The radio official in the Duesseldorf Chancery, Hochstein, connects the demand for "being able to get programs back" with the point that the supplementary programs would be cut off in case the tests have negative results. A broad-band cable for 21 television and 18 radio channels is to be installed. In addition to the locally customary 6 television programs received, there will be 3 local programs of West German Radio, 3 of the Second German Television, 3 third programs, a channel for cable texts, a return channel, further channels for video text, screen text and a separate one for

individual use--for example, for surveillance of playgrounds from the home. Financing has not been clarified. The organizational structure is to be one of an institution under law applying to public bodies. In this, the only planned test under SPD leadership, the effects of cable television, its acceptance and only to a lesser extent the technology are to be tested.

Berlin Principles

The deliberations of the Senat in Berlin go back to 1977. The principles formulated at that time have been filled up "with content" in a study by Professor Langenbucher; the political decision of the Senat is still outstanding. In the meantime the concept provides for a corporation under public law yet to be founded, with the possibility of participation by private program sponsors. The point of main effort lies in the structuring of program development for the so-called interactive services (Langenbucher recommends giving out contracts immediately for their technical preparation), program application, and research into program effect. Technical conditions in Berlin have determined the concept. No additional programs (also no further third ones) are to be authorized.

The anouncement that cable television tests will have a "sliding" start in 1982 seems to go back to the manner of proceeding in Munich. The chancery's "conceptual model" from the year 1978 was amplified as a result of the fact that the Federal Constitutional Court's verdict on the Saarland Radio Law does not affect the Bavarian Constitution. This law is the only one that specified, in Article 111a, that only carriers under public law are allowed to make presentations on radio. While putting aside to a certain extent clarification of the calculated finance requirement of approximately DM 20-40 million of investment costs and from DM 40 million to DM 120 million in annual program costs, the solution being striven for is to lay two broad-band cables in the planned city district for the reception of up to 60 television and radio channels. Local programs, third programs, text transmission services, two foreign language programs, space for municipal broadcasts, an "open channel," and possibly two paid programs (Pay-TV)--all this is to be available in Munich. This is to be paid for by means of a lump sum payment on the one hand and direct separate payments for individual programs on the other.

The politicians' desire to translate cable television tests into action hides to a certain extent the rather meager preparations made up to now. Expectations are dampened by the time elapsed to date and the further time required for tests and subsequent scientific investigation. Is all this still going to be realized by 1985 as originally planned? The Stuttgart model is such that it is possible to speak in the meantime of five tests; in Lower Saxony the development is being observed closely; the northern part of the FRG might be "uncoupled" from the media clique. In the political competition of forces, scientists' questions have gone under in the meantime. They want to know: How do program proliferation and individual communication affect people? There is still an opportunity to explore this. It would require that in addition to the many programs offered by cable, wireless programs also be offered for comparison in the same localities and at the same times.

5586
CSO: 5500/2270

EXPANSIVE CABLE TELEVISION SOUGHT FOR MUNICH AREA

Hamburg DER SPIEGEL in German 10 Aug 81 pp 33-35

[Text] The CDU is pillorying wastefulness in radio and television Bavarian assistance for private broadcasters on cable TV?

Each time they return from another visit over there, top managers from West German TV organizations talk about American television with disgust, at best with scorn. They mention "commercialism run riot," and "electronic horrorvision."

More recently, it seems, the reports about the programming fare of American networks are more friendly. One of those who was recently on the site was positively gushing after his return. "There are neatly wrapped packages lying ready," he reported, "we only need to help ourselves."

The traveling radio man was Rudolf Muehlfenzl, editor-in-chief of Bavarian Television, who is already being spoken of as the director of a future cable broadcasting office in Munich. He had been investigating the cable offerings in the United States as an emissary of the ARD [Working Group of FRG Broadcasting Institutes].

Muehlfenzl's observation of the market will be welcome news in the publicly-licensed broadcasting houses, which are out to bar access to private broadcasters in new media. What the Bavaraan programming head saw at "Cable News Network" in the round-the-clock service of TV producer Ted Turner in Atlanta, Georgia--stock market speculations, golf tournaments and complete opera performances--fits into the current program plans of the ARD and CDF [Second Gemman Television Program] for satellitetelevision, which will start in 1985 at the earliest.

Experimental networks for cable programs are being planned in four West German cities --Berlin and Dortmund, Ludwigshafen and Munich--for which an additional charge of 20 pfennigs has already been set on the monthly fees of all radio license holders.

It is clear that private broadcasters will also participate in the cable experiment in Ludwigshafen. The Organization of German Publishers has already set aside the sum of DM 10 million for this purpose. What had been undecided until now was whether the CSU, which is well-disposed to industry, would also open its Munich cablevision for private programmers.

After installation of the cable by the postal service, about 10,000 households in Munich between Gaertnerplatz and Nockherberg will be able to receive the Third

Programs from other Lender, in addition to the ARD and ZDF, as well as foreign broadcasts, for example, from Switzerland and Austria and, where feasible, local television and special sports and cultural offerings.

Many businessmen and social groups would like to earn money from the additional offerings, for which an additional fee must be paid. But they prefer to leave the startup costs to the state and its institutions. The broadcasting offices just for the Munich cable TV will cost around DM 20 million. Bavaria has already included a contribution in exactly this amount in its new budget plan.

The reluctance of private interest groups in the face of the investments is based not only on the unresearched readiness of the viewers to watch, but also on the fact that the Constitutional Court set the "measuring stick very high" (in the words of a Bavarian Radio spokesman) with its June decision in favor of unrestricted commercial television. In Bavaria there is the additional difficulty that the public licensing structure of radio and television was determined by referendum in article 111 a of the Bavarian constitution.

Without the technical equipment and staff and the enormous stock of programs of the Munich institution, the start of cable television in Bavaria will probably not succeed. Long before the decision was reached concerning the fee increase requested by the broadcasting institutions, Bavarian station personnel had taken a look at the American market. They want to go full-force into the new channels--"and not in this piecemeal fashion" (in the words of one of the scouts). They would like best of all to extend their TV monopoly to future programs.

The "readiness of devout people to help," as party leader Franz Josef Strauss jibed recently, came opportunely for opponents of the monopoly in the CDU. The government leader had found out about a confidential 83-page report of the Bavarian supreme court of accounts about Bavarian Radio. After reading it, Strauss said: "It contains some interesting things."

The cabinet chief read on pages 69 and 70, for example, that a radio and television director of broadcasting receives a pension of at least DM 15,000 upon retirement --50 percent more than a full minister in the Bavarian government. Legal officials and directors of Bavarian Radio (BR) receiving close to DM 10,000 in pension payments are also above the retirement pay level of a ministerial secretary.

Moreover, according to the court of accounts, Bavarian broadcasting employees can, at their own request, announce their departure as early as the age of 50 to a comfortably funded retirement in cases of "private or professional stress" or "work-related frustration."

Anyone remaining cnn expect considerable job and extra-contractual bonuses, in addition to a high salary. The station considers it worthy of special recompense if a department head is particularly successful with a "live television commentary," if a data processor ensures the "punctual running" of a program or if sound engineers in Fasching are able to solve a "multiplicity of technical, acoustic and audio-physiological problems."

CSU vice chairman and leader of the Land party in Bonn, Friedrich Zimmermann, was the first to make the revealing court report public, because he had the impression

that the objections of the budget examiners should be "reread" first "before a possible increase in the radio and television fees."

The CSU criticized principally the "downright gigantic" growth in staff expenses. According to the court, staff costs grew in 4 years by 93.2 percent and next year will account for 91 percent of the total projected income from fees of DM 428 million.

Even subsequent explanations by the director concerning the selfserving prodigality could only moderately improve the overall impression of the court (and the CSU) that the radio and television organization had created a "special place" for itself through a "combination of top salaries from free enterprise and social benefits which in part exceed those of public office."

Annoyed about the sinecures accumulated over the decades, social-Christian broadcasting experts want to stop the institutions, with their fee monopoly, from continuing to have technical progressspaid for by listeners and viewers, as was the case with the introduction of television and color television.

The Laender broadcasting companies, pointing to satellite television, cable TV and videotext, have already announced to the "investigating Committee on Financial Need" formed by the prime minister a monthly surcharge amounting to more than DM 8 on the rate increase, set for the beginning of 1983.

Strauss has frequently criticized publicly licensed broadcasting, has decried the ARD as a "red broadcasting association" and has sought to force Bavarian Radio increasingly under his party's domination.

For years the Bavarian has taken different on radio in private hands than his internal party rival Ernst Albrecht in Hannover, who last year was reprimanded by the judge at the Administrative Court in Berlin during his planned breakup of North German Radio.

Strauss is as sceptical in his judgments on the social effects of commercial program competition, particularly the consequences for families and children, as Albrecht's archenemy Hans-Ulrich Klose, the former mayor of Hamburg. In the same manner as Klose, Strauss expressed his concern to the Bavarian Landtag that by watching too much television "a second live replaces one's primary life, and the good or evil world is no longer experienced personally, but comes secondhand."

There is also the fact that when Strauss sctually spoke cautiously in favor of private television, he did not garner only praise from the newspapers, which allegedly angered him. Numerous feuds with daily newspapers or weeklies, most recently with the middle-class-conservative MUENCHENER MERKUR (SPIEGEL 30/1981), have not exactly strengthened his sympathy to publishers' television.

In the matter of cable television and the fee increase the Land leader has apparently yielded to the arguments of his well-paid party friends in the Munich institution. In express contrast to his party vice president (Strauss: "I am different from Zimmermann") he no longer plans to oppose the "unpleasant decision" for a rate increase.

After all, according to the government leader, radio license fees had "the second lowest rate of increase in the public sector" in comparison to charges for the railroad and the postal service.

9581
CSO: 5500/2275

BRIEFS

MUNICH CABLE TV--In 1982 about 10,000 households in Munich will be able to receive 12 television programs. This time frame can only be adhered to, in the view of the commission for the pilot cable project in Munich, if the state government begins the project soon. The commission, which presented an interim report yesterday, is trying a "bold" project, in the final phase of which between 50 and 60 channels can be offered. According to initial estimates, it will probably cost the TV consumer about DM 1,500 if he wants to utilize all the possibilities of the cable hookup. In its completed state subscription channels for radio, television and the recall of films as well as magazine and newspapers will be available [Text] [Bonn DIE WELT in German 17 Jul 81 p 3] 9581

CSO: 3500/2275

SOUTH TO GET AUTOMATED MOBILE PHONE NET IN 1982

Helsinki HELSINGIN SANOMAT in Finnish 5 Aug 81 p 19

[Article: "South Finland Mobile Phones to be Automated Next Year"]

[Text] Automation will be expanded to include mobile phones also. Automation, which is a joint project of the Nordic countries, will begin in August from Lahti. Southern Finland will transfer to an automated system by the end of next year.

The first outside subscribers to the fully automated mobile phone network will be accepted next February already, states Engineer Kalevi Merontausta of the Postal and Telegraph Administration.

According to a preliminary decision the automated mobile phone system will extend all the way to Rovaniemi in 1986. As the automation is expanded it is estimated that the present number of 25,000 mobile phones will increase by approximately 3,000 annually.

A little less than 100 support stations will be built into the Ruuhka-Suomi automated system. The Swedish LM Ericsson Corporation will manufacture the telephone exhanges, and the domestic firm, Mobira, will build the support stations. More than 10 different enterprises are competing for the mobile phone market.

Number of Channels to Increase by More Than 50 Percent

As automation is expanded the number of mobile phone channels will be increased from 80 to 180. The telephone switching system will be transferred from a manually operated one to a computer operated system.

According to Engineer Merontausta automation will mean more rapid and reliable operations for the mobile phone user. "Also an automated system is less expensive, at least for those who use the phone a lot."

The manually operated system will be retained in the ordering of mobile phones, at least for the duration of this decade. Thus a telephone user can choose, and, for example, it is worthwhile selecting a manually operated hook-up for those who are not frequent users.

According to Merontausta automation of the mobile telephone offers the user

a large step forward. "Automation will eliminate weak connections since a computer will switch a weak connection over to a stronger one."

The Nordic system is from an engineering point of view unique in the world. In the new NMT-system support stations maintain a continuous connection with the telephone network and also with the mobile phones.

The exchanges operating on microprocessors continuously transfer information, on the basis of which billing is accomplished, along the channels without causing any interference on the user's line.

By the end of next year Finland's automated system will cover Helsinki, Turku, Tampere, Hameenlinna, Lahti, and the southern areas of Kouvola. The majority of the users of mobile phones are in this area.

Sweden Will Begin First

Within the Nordic countries automation will begin first in Sweden where the system will be in operation next October already. There are already approximately 250 primary stations in Sweden.

Denmark's mobile phone network will be automated throughout the whole country by the end of the year. In Norway automation will commence in several communities at the same time.

The adoption of automation will be made easier with the help of Nordic cooperation. For example, Finland will be able to obtain valuable experience from Sweden because of close ties.

At the present time in Finland there are nearly 20,000 mobile phone conversations daily. More than one-fourth of the telephone traffic from cars is in the Helsinki area.

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END

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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 181

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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BRIEFS

UAE, PAKISTANI AGENCIES SIGN ACREEMENT--Abu Dhabi, 26 Aug (GNA)--A news cooperation and exchange agreement was signed here today between the Emirates News Agency and the Pakistani News Agency [not further specified]. The agreement provides for expanding bilateral news coverage, exchangiug international news that concerns the two countries and increasing the volume of news on each country broadcast by the two agencies. The agreement also provides for a mutual free exchange of news. It is part of a joint media and cultural cooperation scheme between the two countries. [Text] [GF261456 Manama Gulf News Agency in Arabic 1206 GMT 26 Aug 81]

CSO: 5500/2295

BRIEFS

TV EQUITY IN SATELLITE--Canberra--The Federal Government is preparing to limit the influence of television networks on the operations of the domestic communications satellite. The Government is considering putting a ceiling on the amount of shares that any company may hold in the satellite. In a speech to the National Country Party conference in Adelaide at the weekend, the Minister for Communications, Mr Sinclair, indicated support for limiting the shareholdings. It is likely the limits would be similar to those on shareholdings in Australia's private banks. Under the Banking Act, no shareholder or groups of associated companies may hold more than 10 per cent of the shares in a bank. The Government has already said the satellite will be owned 49 per cent by the private sector. The remaining 51 per cent equity will be held by the Government possibly through a new statutory authority. The Department of Communications is examining possible ownership arrangements for that part of the satellite which will be owned by the private sector. In addition to support for splitting the private ownership of the satellite into small parcels, Mr Sinclair also gave support for restrictions on ownership of the satellite by its major users. This would involve restrictions on ownership by the main television networks and the communications industry. [Text] [Melbourne THE AGE in English 3 Aug 81 p 5]

CSO: 5500/7545

ISRO HEAD TELLS SATELLITE LAUNCHING PLANS

New Delhi PATRIOT in English 30 Jul 81 p 7

[Text]

BOMBAY, July 29 (UNI) —The Indian Space Research Organisation (ISRO) is planning to launch satellites like Bhaskara and Payloads, weighing between 600 and 700 kg into sun-synchronous orbits by 1985-86, according to ISRO satellite centre director UR Rao.

The ISRO was also planning to upgrade SLV-3 launch vehicle with strap-on boosters to achieve a capability of launching 150-kg payloads and develop a totally new vehicle in two to three years, Prof Rao told UNI.

He said with the know-how gained from the Indian national satellites and later with the development of our own launch vehicle SLV-3, the country would be able to launch its own communication satellites in a few years.

Prof Rao said it was essential to launch sounding rockets for carrying out experiments related to atmospheric physics, meteorology and astronomy. These were basically designed to understand the atmosphere, atmospheric circulation and the ionosphere.

He said the equatorial electrojet passes the country right over the geomagnetic Equator below which Thumba was located and since then we have made considerable progress. Within a short time, it was quite clear that the space technology could provide benefits, particularly in the areas of remote sensing, meteorology, communications and other resources.

In his opinion, a developing country like India can avoid step-by-step progress followed by developed countries. 'By avoiding the intermediate steps we can reach the level of progress the others have already reached.'

Prof Rao said one must base one's choice on sound technological judgments and cost benefits so that the sophisticated technology was adopted not for prestige but to cater to the needs of the country.

India, therefore, preferred the satellite technology in 1972 since the purpose of any peaceful space programme was to launch satellites, particularly for application purposes. Thus Aryabhata, the first satellite, was launched in 1975 with Soviet Assistance to build the capability in spacecraft technology in its thermal controls, telecommands, data transmission and power system.

Having proven that capability we immediately went to Bhaskara, an experimental earth resources satellite, to provide imagery over the country and the surrounding areas for aiding hydrology, forestry, snow-cover, snow-melt and ocean surface conditions, he said.

Prof Rao said Bhaskara-II was to be launched within the next few months and, likewise, we took up work on highly complicated Ariane Passenger Payload-Experiment (APPLE) which was a three-axis stabilised geostationary satellite. This would pave the way for future operational communication satellites as Bhaskara was paving way for the future earth resources satellite.

The ISRO director said Bhaskara was providing us pictures from both its television cameras and microwave imagery, of the Indian sub-continent and the surrounding oceans for resources purposes and, in the meantime, "we also went through the satellite instructional television experiment (SITE) where we had borrowed the ATS-6 satellite for a year from NASA and used it for demonstrating the capability of a communications satellite".

It was used for the purpose of education in remote rural areas which demonstrated that a communications satellite of this type was the answer to the problem of improvement of quality of life in the rural areas in our own lifetime, he said.

Meanwhile, encouraged by the success of Bhaskara, "we have already started working on the design of a semi-operational remote sensing satellite with a resolution of 40 to 50 metres, unlike Bhaskara which had a resolution of only 800 metres" Prof Rao said.

This satellite, which would be called the Indian remote sensing (IRS) satellite, would hopefully provide information in areas like agriculture and soil mechanics, geology and mining, which was crucial for the development of the country.

CSO: 5500/7168

SATELLITE DEVELOPMENTS IMPROVE WEATHER FORECASTING

Bombay THE TIMES OF INDIA in English 1 Aug 81 p 6

[Text]

SECUNDERABAD, July 31: The National Remote Sensing Agency (NRSA) here, which is under the department of space of the government of India, successfully predicted this year also the snowmelt inflow into the Bhakra reservoir from Sutlej river catchment using satellite data recorded at NRSA earth station at Shadnagar near Hyderabad. They also predicted successfully for the first time the snowmelt flow of the Ganga river.

With the advent of satellite remote sensing, it has now become possible to map and monitor reasonably accurately vast areas of snow-cover in the Himalayas and forecast snowmelt runoff.

The NRSA made an indepth study of the AVHRR (Advanced Very High Resolution Radiometer) meteorological daily data of U.S. NOAA (National Oceanic and Atmospheric Administration) satellite for January-March and predicted the snowmelt runoff using regression model developed by NRSA.

The Bhakra-Beas management board, the Central water commission and the Central electricity authority were informed by NRSA in the first week of April that the total snowmelt inflow into Bhakra would be about 1.7 million cusec-days. Against this, the measured inflow was 1.619 million cusec-days—a discrepancy of only five per cent.

The forecast given by NRSA last year differed from the actual by about ten per cent.

A similar study was done for the first time in the case of the Ganga river this year. The snow-melt runoff of the Ganga at Devaprayag predicted by NRSA in the first week of April has been only six per cent more than the actual runoff.

Such forecasts help the authorities concerned to regulate and make the optimism use of the valuable scarce summer flows for power generation, irrigation, drinking water-supply, etc.

With the experience gained during the last couple of years and with the data available from NOAA and Landsat satellites and from the Indian satellites like the SEO-II which is to be launched soon, forecasting of the snowmelt runoff will be done with greater confidence in the coming years.

CSO: 5500/7169

WORLD BANK AID FOR TELELINKS TOTALS $802 MILLION

Calcutta THE STATESMAN in English 9 Aug 81 p 7

[Text] NEW DELHI, Aug. 8.—With the recently negotiated credit of $314 million from the World Bank, the total assistance from the bank and its affiliates for telecommunications in India adds up to $802 million.

The latest credit negotiated with the International Development Association, a World Bank affiliate, is free of interest, with a service charge of up to 1% a year on the principal. The principal is to be repaid in 50 years, with an initial grace period of 10 years, in semi-annual instalments from about the middle of 1991.

The beneficiaries will be the Indian Telephone Industries, the Hindustan Cables, the Hindustan Teleprinters and the Posts and Telegraphs Department.

Out of the total assistance of $802 million, $444 million have been allocated for procurement of raw materials and components for the Indian telephone industries, Hindustan Cables and Hindustan Teleprinters.

A special feature of the latest credit from the International Development Association is that for the first time it is financing the setting up of new manufacturing units in the telecommunications sector.

Out of the $314 million, $44.8 million have been allocated to set up three manufacturing units—the Palghat factory under the ITI to manufacture 150,000 lines of electronic switching equipment costing $12.8 million in foreign exchange, a new cable factory at Hyderabad to manufacture 3 million conductor km of underground telephone cables at a cost of $25 million and a new electronic teleprinter factory at Hosur to manufacture 8,000 units of electronic teleprinter machines costing $6.5 million.

Of the posts and telegraphs project, the largest share of $84.5 million goes to ITI, followed by $77.2 million to HCL and $1.3 million for HTL.

CSO: 5500/7174a

WRITER EXAMINES CAPABILITIES OF 'APPLE' SATELLITE

Bombay THE TIMES OF INDIA in English 2 Aug 81 Supplement p 4

[Article by N. L. Chowla: "Going Places With the APPLE"]

[Text] The APPLE satellite is capable of providing a television and radio network for different parts of the country. For a country of India's size and heritage, interpersonal communication satellites can revolutionise the thinking and action processes.

THE spacecraft APPLE (Araine Passenger Payload Experiment) has already entered the operational phase for several kinds of experiments in communication. The satellite has been linked with the earth stations at Delhi and Madras and with the transportable remote area communication terminal (TRACT) at Ahmedabad. These linkages have been tested and found satisfactory. The Ahmedabad Tract has also demonstrated its linkage with Bangalore by transmitting a TV programme through the satellite. The C band communication transponder, which is the nerve centre of the APPLE, is receiving telecommunication and TV signals to amplify and retransmit them over the entire country, even to remote areas. Its 90 c.m. dish antenna which is pointed towards the beam centre at Nagpur is in a position to enable "APPLE's voice" cover the entire country. The transponder is operating in the 6/4 GHz bands. In fact APPLE's transmission frequency is such that there can also be a spillover to neighbouring countries of Pakistan, Bangladesh, Sri Lanka and Burma. It is a matter of no small recognition of our technological capability that the payload integration of the C band transponder as well as the Apogee Boost Motor which fired the APPLE into a geostationary orbit were developed in India, the former at the Space Application Centre at Ahmedabad and the latter at the Vikram Sarabhai Space Centre, Trivandrum.

Thus India's first synchronous communication satellite which should be in use for about a year is ready for wide-ranging experiments in the uses of satellite for communication purposes. The experiments which can be conducted are varied and include nationwide radio and television networking, point-to-point communication, data transfer, interconnecting of computers and Time Division Multiple Access which will determine the future of satellite linked telephone systems and will enable a number of messages to be transmitted on a single frequency. Under Spread Spectrum Multiple Access the experiments will investigate the feasibility of using spread spectrum pseudo-noise coding techniques as a means of providing random multiple access communication through a satellite. These experiments will lead to a more efficient use of satellite repeater power and bandwidth. Other experiments through the APPLE are expected to generate criteria for the designing of future operational packet switched data transmission systems and testing the interface equipment. They will help develop a small, portable terminal for satellite communication by the use of various advanced techniques. The Post and Telegraph department has planned to develop indigenous capability of designing and fabrication of hardware which will open up possibilities of introducing new techniques and services.

It has been claimed that the capability of this scale has hitherto been demonstrated only by the USA, USSR, France and Canada. All that and more heralds a major breakthrough. But even through the APPLE is essentially a technological satellite planned to gain experience in some of the sophisticated operabilities of a geostationary satellite and its control and management the relevance of the APPLE to demonstrate experimentation in communication involving people should not be lost sight of. For example, the APPLE is capable of providing television and radio network for different parts of the country. It can also bring together in one network computers and teleprinters anywhere in the country and this in turn can bring about closer cooperation among institutions engaged in scientific and communication activities. The linkage can also be used by railway authorities to monitor the booking of reservations in the entire network of the railways and by the telegraph services to transmit telegrams through the satellite. But we should be interested in what has

been planned to be achieved during the year.

An interesting proposal that has so far emerged for utilising the APPLE network is for conducting a summer school, through satellite communication, at the Indian Institute of Technology at Kharagpur. The Space Application Centre has proposed to locate a TRACT at IIT Kharagpur and through it will be established a television network between the IITs at Delhi, Madras and Kharagpur and the Space Application Centre at Ahmedabad. Delhi and Madras have earth stations and SAC in Ahmedabad is equipped with TRACT. The IITs at Bombay and Kanpur, and other educational institutions are also expected to join the experiment. What has been proposed is the use of the network for conducting a post-graduate level satellite communication course, common for all IIT students. The faculty for this course could come from any or all the IIT centres. Under the experiment, television lectures for about one hour duration will be prepared in advance and transmitted. At the end of each lecture the faculty member concerned would be available for sitting at different centres. A two-answering questions from students way teaching system, connecting several places, although not quite an innovation, will be tried in our country for the first time. The students will have the thrilling experience of interacting with an eminent teacher without having him in the classroom. Such a television course on a highly technical subject like satellite communication enlisting the participation of the best academic talent from different IITs and other technical organisations would indeed be the beginning of a new era in education.

Similarly a TRACT is also intended to be located in north-east India connecting a micro-level project with the rest of the country to test comunication links through satellite with that region. According to ISRO sources, TV coverage of the Independence Day function at the Red Fort including the Prime Minister's speech will be relayed via the APPLE. But is that all that can be experimented with?

In May 1979 the Space Application Centre put out an announcement of an opportunity for the conduct of experiments using the APPLE spacecraft. The announcement gave details of possible experiments and indicated the potentialities as well as the constraints of the APPLE. Some of the possible uses listed were to use the APPLE for the training of trainers in villages — through conducting multi-location seminars — to study the social, economic and cultural impact of the introduction of telecommunication facilities of a new dimension in "virgin" areas, to study the impact on decision-making and administration caused by the provision of reliable, high quality, instantaneous point-to-point communication and to plan and try out experiments in participative "face-to-face" democracy. Clearly, the two-way audio or even video linking remote locations to state capitals and/or the national capital opens up numerous possibilities for direct communication with the people in the rural areas. It needs to be appreciated that for a country of India's size and heritage of interpersonal communication satellite linkages can revolutionise the thinking and action processes.

When the Indian Space Research Organisation invited proposals for experimentation with any one of these ideas the response was poor. The 'software' organisation which could sponsor experiments in social or educational communication hardly showed any interest. Only some response for the testing of hardware was forthcoming.

It has been stated that in an experiment under "participative democracy" there is the possibility of setting up a two-way live TV link between one of the earth stations like Delhi and any place in the country by deploying a truck-mounted terminal via the APPLE. Presumably it is possible to use the link for a dialogue between the Prime Minister in Delhi and villagers in a distant location. The Prime Minister could thus be brought 'face-to-face' with the people in remote areas. In our situation such an experiment would generate a unique interest. What the SITE could not provide but the APPLE can is a two-way face-to-face communication. Can we not try this experiment and test the technological capability as well the programme format? What can be a more demonstrative way of making ordinary people aware of our advance in technology? It would be interesting to ascertain why several organisations including AIR and Doordarshan have not responded to ISRO's effort to use the potential of the APPLE. Why haven't we set up training centres, as earlier envisaged, at places where training programmes for teachers or village health workers could be conducted through the APPLE? It has also been claimed that the APPLE can be used for an experiment in "tele-medicine". A doctor can examine via satellite patients located at remote places. Paramedical staff can operate a television camera and put out a relay through the satellite channel. The doctor would visually examine the patient. He could ask questions, listen to the patient's heart-beat and see his blood pressure. To argue that such an experiment "may not be worthwhile in the Indian context because the emphasis should be on "preventive rather than curative aspects" is not good enough if the messages of our technological achievements are to be taken to the people. Why haven't we planned for the use of the APPLE for sharing medical education? If it is possible for a surgical operation in one of the prestigious medical institutions to be seen by medical students in other parts of the country who would later ask questions from the surgeon what has prevented the institutions to plan such an experiment?

There is a clear case for using the APPLE to excite popular imagination.

Telecommunications are vital to our progress and television is primarily committed to be used for information and education. It can also not be missed that the APPLE mission is in preparation for the launching of the first Indian National Satellite (INSAT) next year. Let us conduct some of these very worthwhile experiments in software communication. The experiments should not be aimed at acquiring the requisite technology for application in INSAT only.

CSO: 5500/7170

'APPLE' USED IN NATIONWIDE TELEVISION BROADCAST

New Delhi PATRIOT in English 14 Aug 81 pp 1, 5

[Text] INDIA took a great leap forward in satellite communications on Friday when Prime Minister Indira Gandhi launched APPLE into its utilisation phase in a 20-minute programme telecast nationwide, report agencies.

Television viewers all over the country simultaneously saw the Prime Minister inaugurate the APPLE satellite utilisation experiment from the Delhi Earth Station.

The inauguration, in fact, was split between the Delhi earth station and the Vikram Hall of the Space Application Centre at Ahmedabad where the scientists associated with APPLE from its conception to launch had assembled.

In what was the first teleconference with the help of APPLE, the scientists were brought face to face with Mrs Gandhi, who handed over a model of APPLE to Communication Minister C M Stephen at the Delhi Earth Station in Buddha Jayanti Park.

Via APPLE, the 20-minute ceremony was witnessed live in Delhi, Bombay, Calcutta, Madras, Pune and Ahmedabad.

The transmission came through with flying colours the picture as sharp as on a normal telecast and the sound crystal clear.

'That you can see and hear me,' Mrs Gandhi said to viewers across the nation 'is a symbol of our growing technological self reliance. It is a symbol of the use of science for peaceful and experimental purposes.'

ACHIEVEMENT

She described the ceremony as a 'small function for a big achievement' and utilised it to greet the scientists and engineers of India and in particular our children, who are the scientists of tomorrow.

She conveyed her special congratulations 'to the scientists of the Indian Space Research Organisation, who through APPLE, 'have earned the respect of the world.'

Prior to the inauguration ceremony, APPLE relayed from Ahmedabad the story of its life, from its inception, through its launch from Kourou in French Guyana two months ago and the problems that occurred prior to its parking in space.

Interspersed with this were interviews with the scientists and technicians involved in the project.

Bangalore Sacellite Centre director Prof U. R. Rao said in an interview that the space scientists will renew their efforts to unfurl the second solar panel of APPLE, once all scheduled experiments are gone through.

CSO: 5500/7181

PLANS FOR TELEVISION REPLAY CENTERS REPORTED

New Delhi PATRIOT in English 4 Aug 81 p 5

[Text]

A relay television centre may be established at Bangalore to enable the people in the city to view programmes put out by both Madras and Bombay TV centres before a regular centre is established there reports UNI.

Information and Broadcasting Ministry sources said on Monday the micro-wave link between Madras and Bombay passes through Bangalore and would make the setting up of the relay centre feasible.

Bangalore is one of the three centres where regular TV centres are to be established during the sixth Plan. The other two centres are Ahmedabad and Trivandrum.

The proposal to set up a TV centre in Gauhati included in the revised plan has still to be cleared by the Public Investment Board. The total cost of setting up TV centres at Ahmedabad, Bangalore and Trivandurm is estimated at Rs 13.08 crores.

The site for the Ahmedabad TV centre has already been acquired near Thaltej.

The sources said that construction of the building had been handed over to the State Government and the State PWD department was drawing up a detailed plan for the same. Orders for equipment and the transmitter for the centre had already been placed with the public sector undertaking, Bharat Electronics Limited. The centre is estimated to cost Rs 4.69 crores when it is ready in 1984.

The Bangalore TV centre will be located on the Jayamahal Road where an appropriate site had acquired and the foundation stone laid by the Minister of Information and Broadcasting Vasant Sathe. Estimated to cost Rs 3.91 crores, building construction has been entrusted to the Karnataka Government.

The Trivandrum TV centre will cost Rs 4.48 crores. Land for this centre has been acquired and the foundation stone for the building laid by Mr Sathe. Orders for equipment and transmitter for this centre have also been placed with BEL.

The Government proposes also to set up eight relay centres at the following places: Panaji (GOA) Asansol (West Bengal), Madurai (Tamilnadu), Murshidabad (West Bengal Varanasi (UP) Vijayawada Andhra) Cuttack (Orissa) and Kasavli (Himachal Pradesh).

CSO: 5500/7172

REGULATION OF TWO-WAY RADIO COMMUNICATIONS EASED

Bombay THE TIMES OF INDIA in English 3 Aug 81 p 20

[Text]

NEW DELHI August 2 (PTI): Like in many Western countries, the two-way communication by radio will become a common place in India in the next few years.

The ministry of communications has decided to liberalise the issue of licences for fixed and mobile radios to the public sector and government agencies that have a genuine need for two-way communications.

It will however be a while before taxis and private cars would be permitted to install radio telephones or individuals would be allowed walkie-talkies.

Official sources said that several aspects, including national security, would have to be taken into account before putting the two-way radio equipment in private hands.

SEVERAL INQUIRIES

Meanwhile, the Karnataka state transport corporation has been given licence for two-way radio for keeping contact with its fleet of buses.

The ministry has been flooded with inquiries from several state and Central government agencies for two-way radio communication licences, the sources said.

In the capital, the Delhi transport corporation, mother dairy, the Delhi electric supply undertaking, fire and ambulance services are planning for two-way radio communications.

Transport corporations in Punjab and Haryana and the Bombay electric supply and transport (BEST) were keen on using the facility, the officials said.

The communications ministry is the custodian of radio frequency and is responsible for the allocation of frequencies to various users.

The officials said the frequency bands reserved for the two-way radio traffic were at present under-utilised unlike in Western countries where the spectrum is saturated.

They said the use of the radio spectrum for meeting communications needs of government and public sector agencies would speed up the development process.

There was always the possibility that the two-way radios would be misused and hence the ministry would go slow in extending this facility to private agencies, the officials said.

The two-way radio equipment would be fixed as well as mobile. A high-power fixed equipment could cover a radius of 40 km., they said.

CSO: 5500/7171

INDIA RADIO TERMINATING PRESS AGENCY CONTRACTS

Calcutta THE STATESMAN in English 12 Aug 81 p 9

[Text] NEW DELHI, Aug. 11.—The Union Government recently issued notices to four news agencies terminating the agreement between them and AIR and Doordarshan on the "supply" of news to these two organisations. The news agencies are: Press Trust of India, United News of India, Hindustan Samachar and Samachar Bharati.

Information and Broadcasting Ministry sources said the notices had been issued to restructure the AIR-Doordarshan subscription formula necessitated by the abolition of licence fee for one band and two-band small radio sets in the 1980-81 Budget. The subscription payable to news agencies by AIR and Doordarshan is based on the number of radio licences.

The notices have been issued under clause 6 of the agreement between the news agencies and the Government which reads: "This agreement shall be deemed to have been in force from .. and shall continue till terminated by either party on six months' notice given in writing". The agreements were signed in March, 1979, after the split of Samachar.

But it is not clear why the notices were not issued under clause 2(8) which inter alia said: "The above rates of subscription will take effect from 9-3-78 and will continue to be in force till terminated by either side on six months notice, given in writing ....".

The present subscription formula does not satisfy the news agencies in view of the abolition of licence fee in respect of one and two-band radio sets which naturally brought down their share.

The financial implication of the Pa'ekar award forced them to seek revision of the subscription formula. The payment by AIR and Doordarshan is the mainstay of the economy of the news agencies. For example, in 1979-80 PTI received from AIR and Doordarshan Rs 34.32 lakhs, UNI Rs 22.88 lakhs, Samachar Bharati Rs 4.60 lakhs and Hindusthan Samachar Rs 5.25 lakhs.

The news agencies have been asked to furnish relevant facts to enable the Government to revise the subscription formula.

CSO: 5500/7176

INDIAN TELEPHONE INDUSTRIES EXPANSION PLANNED

Bombay THE TIMES OF INDIA in English 8 Aug 81 p 9

[Article by S. Dharmarajan]

[Text] Parked in the premises of the complex of Indian Telephone Industries (ITI) here is a blue and silver truck trailer with an antenna attached to its rear.

Inside the vehicle standing amidst a maze of equipment, a young engineer proudly points to electronic beams recorded on a screen representing the signals relayed and received from APPLE, positioned 36,000 km up in space.

A few yards away in a hall, a group of technicians are making final checks of a row of telephone lines of a system which the ITI started manufacturing soon after it was established 30 years ago and proposes to phase out in a couple of years.

The progress of the ITI from the manufacture of the particular telephone system to the mobile earth station at the end of the assembly line epitomises the ITI's effort to accept and absorb the latest technology and constantly update it to keep abreast of the advances in the world.

These also point to the problems the major public undertaking faces in its efforts to keep pace with the global telecommunications revolution.

R & D Efforts

The mobile earth station, fully designed and fabricated to a large extent in the ITI, is part of the wide spectrum of equipment which have resulted from an intensive R and D effort. At the same time, the rapid rate of obsolescence of this technology poses a constant challenge to its engineers. Still, the ITI could be justifiably proud of its R and D as its performance shows.

The ITI spends five to six per cent of its turnover of Rs. 104 crores on R and D. While this compares well with the effort in many public and private undertakings, the amount is too small for a wide area like electronics and telecommunications, where technology advances at a breathtaking pace.

The rapid strides in technology have brought to the ITI the problem of redundancies. The factory is faced with the task of redeploying and training as many as 4,000 to 5,000 employees in new areas, as it stops producing in the next three years the system of telephone lines with which it began operations in 1948.

A separate centre is being started by the ITI to train these employees in the manufacture of electronic switching equipment, for the programme for the next several years is designed to go electronic from the current electro-mechanical system.

Shortfall Expected

The ITI, which has in over three decades grown in proportion far beyond what was envisaged at its start, has nine units located in five centres. It will have yet another factory as part of expansion schemes to meet the demands for exchanges in the 80's. The projection is of the order of 10.3 million lines of switching equipment comprising local exchanges, trunk automatic exchanges, telex exchanges and PBX's. The ITI's order book is far too heavy.

Tender specifications for establishing factories have been drawn up by an expert committee, including representatives of the P and T, the electronics department and the ITI. Global tenders have been accordingly floated. An import of two lakh lines of finished equipment for electronic exchanges is also planned.

Nevertheless, there is bound to be some shortfall, as the first new factory will take at least four years to build and reach its full rated capacity. The second factory is to start production two years later so as to able to profit by experience.

It is here that the ITI's R and D has acquired its urgent relevance. According to the chairman, Mr. G. S. S. Rao, who is quite confident that the challenges could be met, 60 per cent of the equipment currently being manufactured is of indigenous design. Even in the remaining 40 per cent substantial adaptations have been made to improve reliability of operation.

One of the substantial achievements of R and D at Bangalore is the Indian version of the cross bar exchange which rectifies many of the limitations of the original system to suit Indian conditions. Since then the government has approved a project for the manufacture of 200,000 lines a year of the indigenous version at Rae Bareli at an estimated cost of Rs. 64.5 crores. The design has been developed by a joint team of the telecommunications research centre and ITI engineers to provide a solution to all the problems encountered in the previous system. The original system could not cope up with the density of calls, which is far less in all other countries where it is in vogue.

The R and D programme has also produced a sizable force of highly skilled manpower working in wide-ranging areas like electro-mechanical and electronic exchanges, computerisation, cable circuits, special devices for defence services, transmission equipment and satellite communication.

Has the ITI taken too much of a load on itself? Why not other state electronic corporations have a share? Mr. Rao has an answer. With the extent of its investment, availability of skills and other facilities, it would be better to make optimum use of its resources than divert funds from the national exchequer. Much can be said on the capability claims of both sides as, for instance, the Gujarat Electronics Corporation has successfully delivered the goods to non P and T users of communications equipment like the Oil and Natural Gas Commission (ONGC) and the railways. In any event, the decision rests at a much higher level than with the ITI.

CSO: 5500/7174

PRODUCTION OF ELECTRONIC TELEPRINTERS PLANNED

New Delhi PATRIOT in English 12 Aug 81 p 5

[Text] THE public sector Hindustan Teleprinters Limited will take the country to the electronic era by producing electronic teleprinters by the next year at its new unit at Hosur in Tamilnadu.

According to HTL's expansion programme, which has been approved by the Government, the switch-over of production to electronic teleprinters will be completed by 1985 when it will stop rolling out the present electro-mechanical machines. The Madras unit, which now produces these machines, is being streamlined for exclusive production of electronic typewriters.

Chairman-cum-mananging director of HTL B C Seetharaman told visiting newsmen at Madras that the existing unit would continue to produce spare parts for the machines already in use. He said 23 firms had responded to the tender for technical collaboration. Negotiations will begin by the month-end, after the tenders are opened.

WORLD BANK LOAN

Finances for meeting the payments for the foreign process could be met by a Rs 5 crore World Bank loan. The initial production target of 5,000 teleprinters will be raised to 15,000 by 1985.

The cost of an electronic teleprinter will be about Rs 25,000 as against Rs 15,000 for the electro-mechanical machines. Mr Seetharaman claimed that this would be more or less on par with the international prices. The HTL is going ahead on the presumption that a few thousand machines will have to be imported initially to meet the demands during the intermediary period.

About 35,000 machines, partly electronic and partly electro-mechanical, will be produced between now and 1985. The demand was expected to go up to 60000 machines during the seventh Plan. It was explained that though India has been exporting teleprinters, these have no demand now as they have become obsolete. However, HTL expects a promising market abroad for the new machines.

In the fast-changing production technology, it is anticipated that the new electronic teleprinters will also become obsolete by early '90s. But they can survive at least seven years after 1985. Mr Seetharaman said the new technology could be brought for production at that time.

HTL will produce about 15,000 electric type-writers at the existing plant in collaboration with Olivetti of Italy. It is estimated that the price of the new typewriters will be around Rs 6,500 Though HTL had produced its own electric typewriters, it became a failure. It was given up in 1973.

The Italian company would also like India to produce Arabic electric typewriters under a buy-back arrangement under the former's brand name. Quotations have been sent by HTL for this purpose. The HTL has successfully produced electro-mechanical Arabic teleprinters and is exporting them to the Gulf.

HTL has also received a letter of intent from the Government for the manufacture of 25,000 floppy drives for computers. Other items on hand are data modems.

In spite of the significant strides since its inception in 1960, HTL is yet to gear up its research and development wing. Its small, young dedicated cadre faces several handicaps. It needs more staff equipment and above all, recognition. Its funds are limited.

Despite all this, HTL has been able to acquire enough expertise to evaluate any production technology being imported. Its biggest achievement is an automatic dialling equipment for telex which is to be ready in 15 months. It is claimed that this is the first of its kind in the world.

CSO: 5500/7179

OFFICIAL FIBER TECHNOLOGY EXPECTED BY END OF 1982

New Delhi PATRIOT in English 31 Jul 81 p 5

[Text]

MADRAS, July 30 (PTI) INDIA is poised to make a major technological breakthrough in communications with the 'giant step' taken by five institutions to develop optical fibres (glass crystal pipes) that promise to make terrestrial communications cheaper and more efficient than satellite communications.

Keeping up with the latest technology available in the United States, Soviet Union and West Germany, these institutions (the IIT at Madras), Kharagpur and Kanpur, the Central Scientific Instrumentation Organisation (Chandigarh) and instrumentation research and development Dehradun have engaged themselves in the task of making "optical fibres" indigenously.

Optical fibres, tested for endurance against floods, shocks, and even nuclear radiation, can revolutionise communications in India in the nineties, providing an economically feasible telegraph, teleprinter, telephone and TV network at much cheaper cost than satellite communications, according to Dr J P Raina project director of communication grade fibre technology at the IIT Madras.

Dr Raina told PTI that the IIT here would be able to bring out a prototype communication tank based on optical fibre technology before the end of 1982 for use in communications in ships, aircraft and even satellites.

The optical fibre, smaller in diameter than a pin-head and stronger than copper wire, could carry information on 35,000 analog telephone channels or 2200 TV channels as against the coaxial cable's 100 channels and the conventional cable's 10 channels.

In India, fibre optics would play at major role in the nineties and early 21st century when the pressure on existing telecommunications networks would have reached saturation point, he said.

With every monsoon and flood the telephone network was thrown out of gear. Fibres would be resistent to such damage.

CSO: 5500/7169

BRIEFS

ROHINI BURNS OUT--Bangalore, August 5 (PTI): "Rohini One", the first Indian satellite launched from Indian soil with the country's own launch vehicle SLV-3, re-entered the earth and burnt out on July 24, after being in orbit for over a year, the ISRO announced here today. Rohini was injected into a near-earth orbit from Sriharikota on July 18 last year with the primary mission to evaluate the performance of the fourth stage of SLV-5 launch vehicle and monitor important parameters such as velocity, separation shock, pressures and temperatures. Though originally the life of the Rohini mission was estimated at 100 days, the 35-kg. satellite was in orbit for over a year. It satisfactorily fulfilled all the mission goals and provided useful data till it re-entered the earth, the ISRO said. The Rohini, also carried indigenously fabricated solar panels containing indigenously manufactured solar cells. The satellite was helpful for the ISRO tracking network for tracking experiments and orbit modelling. The satellite was orbiting with an apogee of 910 km. and a perigee of 308 km. It had an orbital period of 97 minutes. [Text] [Bombay THE TIMES OF INDIA in English 6 Aug 81 p 5]

BHASKARA OPERATIONS END--Bangalore, Aug. 11.--The normal operations of Bhaskara, India's first earth observation satellite, have been terminated after fulfilling most of the mission goals in the two years of operation, the Indian Space Research Organization said today, reports UNI. An ISRO Press Note said though the satellite was nominally planned for a design life of one year, the life was extended to nearly two years through careful management of the onboard gas for control operations. It said the normal operation of the satellite was terminated on August 1 since the fuel on board had depleted and control of payload operations were not possible. [Text] [Calcutta THE STATESMAN in English 12 Aug 81 p 9]

PONDICHERRY-MADRAS STD--Pondicherry, Aug. 11. The Union Communications Minister, Mr. C. M. Stephen, has called upon the employees of the Posts and Telegraphs Department to develop a sense of "collective commitment" to serve the nation instead of indulging in the concept of collective bargaining. Switching on the Rs. 85-lakh automatic telephone exchange of about 3,000 lines at a function here today Mr. Stephen said that by the end of 1990 about 75 lakh telephone lines would be operated as against the present 25 lakh connections. Mr. Stephen also inaugurated the point-to-point STD service between Pondicherry and Madras. He dialled to the residence of the Tamil Nadu Chief Minister, Mr. M. G. Ramachandran to convey the message that he was connecting Pondicherry to Madras over STD. [Text] [Madras THE HINDU in English 12 Aug 81 p 9]

CSO: 5500/7178

FRENCH MINISTER DISCUSSES SALE OF SATELLITE

Rio de Janeiro JORNAL DO BRASIL in Portuguese 24 Jul 81 p 16

[Interview with French Minister of Foreign Trade Michel Jobert by Arlette Chabrol of JORNAL DO BRASIL 23 July 1981; place not specified]

[Text] Brazil is soon to acquire a French communications satellite. The subject was discussed yesterday in Rio and Brasilia between French Minister of Foreign Trade Michel Jobert and Brazilian authorities. The contract was not signed, but "in-depth" and "very advanced" discussions allow one to think that its signing could take place within a short time.

This new cooperation, in a certain way unforeseen, appears to prove that Brasilia does not fear negotiating with the socialist leaders now in power in France. The minister of state, Michel Jobert (former foreign minister under President Pompidou) confirmed during an interview he granted JORNAL DO BRASIL yesterday morning the continuance of good Franco-Brazilian relations based on "well-pondered" matters.

Trust in Brazil

[Question] The France of Valery Giscard d'Estaing made efforts to have good relations with Brazil. Does your presence in Rio de Janeiro and Brasilia some weeks after the formation of the government mean that the France of Francois Mitterrand is determined to continue those efforts and possibly intensify them?

[Answer] I must say that my presence has no single or absolute meaning. I came as a result of commitments assumed with the Congress of Professors of France, which I am seeking to meet even though in the meantime I became a minister of government.

That point cleared up, I am here by agreement of the Brazilian Government, which invited me without embarrassment. On the French side, we shall not hesitate in following the efforts toward Brazil: the priorities given to Brazil and the technologies exported here by us are well pondered matters. There is no reason to refrain from making decisions on them.

[Question] Did your first meetings, your first contacts, give you the impression that the Brazilian authorities may be concerned about the political change which has taken place in France?

[Answer] With respect to policy, I would say no. With respect to the economy, there is a desire on the part of Brazilian authorities to insure that whatever the dangers of the challenges posed to Brazil may be, the potential capabilities of the country be given a greater consideration. And France is fully aware of the importance of those capabilities with respect to possible dangers. As a result, it is a matter of initiatives well-thought out by both sides.

[Question] Francois Mitterand and his government made several statements of intention on the establishment of new relationships with countries of the Third World, within the framework of the North-South dialog, can a change in the nature of bilateral relationships be expected between Brazil and France?

[Answer] It is always very hard to trace a fair path between sentimental speeches and realities. However, the French Covernment did well in having announced that sentiment. Its view of balance is first of all cooperation with the Third World and its development. This is not a matter of a vague element in a speech. It means that in every conversation, in every negotiation, French representatives do not lose that orientation, that objective.

Let us look at an example: We know very well that we are not going to obtain a reform in the international monetary system which takes such exigencies into account tomorrow. That is what happened in the Ottawa Conference. However, everyone can evaluate the orientation of the French Government at that meeting. Beyond the difficulties and obstacles, we shall try to maintain the singleness of ideas and an attitude.

In that which refers more specifically to Brazil, I will say that to us that country is one of the areas of the world where tomorrow powers will be divided. We would be very blind if we did not note that. Let us contribute to the industrial and technical development of Brazil, particularly since a high technical, industrial and scientific activity is always the best trading partner for an industrial country such as mine.

[Question] It is said that Brazil should buy a satellite from France. Could you confirm that report?

[Answer] Should? I will say that there is no obligation unless it is that of the heart and the mind; of the heart because we would be very pleased if Brazil could become adept in that area by means of our advanced technology; of the mind if we consider that such material appears to be exactly suited for what Brazil is seeking.

[Question] Among the questions discussed by President Figueiredo during his visit to France in January, which were outstanding in the negotiations?

[Answer] None of the matters brought up during the visit by President Figueiredo were neglected. I even believe that with respect to certain questions, particularly in the field of energy, we made very good progress; so much so that today the only question still to be resolved is a judicious choice among several projects and the renewal of the financial efforts which accompany them.

[Question] You had expressed the idea that the appointment of communist ministers could be subjected to a probationary period. Now that they are in government, do you believe that their presence may harm France, particularly abroad, in foreign trade?

[Answer] No, I do not have the impression. Malicious tongues even went as far as to say that some countries of the West expressed concern in that respect. But let us be more reasonable with respect to facts: Have the goodness to remember what I once wrote before the first round of the legislative elections. Now, after those elections, the importance of the Socialist Party became so great that the participation by communist ministers in the government became only the banal practice of an internal policy. Thus it is time to understand and evaluate the presence of my communist colleagues in government.

[Question] Is your position in the ministry not particularly critical? Do the positions of principle of the new government of the left always agree with commercial interests and the export needs of France? For the time being France is bent on fulfilling the contracts signed by its predecessors. What about tomorrow? Will the possible loss of customers be balanced by new markets?

[Answer] You are most gracious in your concern over my intellectual and government welfare. Every government, if it begins an action or follows an action, is always interested in describing its position. Observe carefully, I do not say a program, I say an attitude because it is important to distinguish between what is desired and what is intended, despite the difficulties and the inevitable wear and tear which the daily life of nations exerts on enthusiasm and arguments.

I have nothing to retract of everything that has been said up to now and which emanates from a general and ultimately lucid inspiration as to the balance of humanity.

There remains daily life. Like many others, I intend to proceed thus, without too many difficulties, particularly so because the French Government is not the government of an idology but of thought and an action well based on the interests of France. It is true that many contract will be entered into, they will have continuity and even expanded. However, there will be others and it will be better if they could exemplify the hopes of humanity and equality which is what is certainly going to guide the attitude of France.

[Question] You were in Ottawa; is it true, as was declared by a member of the French delegation, that there were some "rough conversations?"

[Answer] The final communique is so serene that you could make me doubt having heard some word said in a tone higher than another in the many conversations. In any case, each one knows how to behave with respect to the great problems which weigh over the world of today. In my opinion, the real question which dominated the Ottawa meeting is this: Do we or do we not want to deal with and resolve the great problems? The final communique obviously answers this question unsatisfactorily.

8909
CSO: 5500/2290

SATELLITES NOW UNDER CONSTRUCTION TO BE LAUNCHED IN 90's

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 6 Aug 81 p 24

[Text] The most ambitious scientific project by a developing country--the planning, construction, launching and maintenance of satellites in space, a technology now only known by the United States, the Soviet Union and France--is being developed only 84 kilometers from Sao Paulo, along Via Dutra in Sao Jose dos Campos. The first Brazilian satellites, to be launched as of 1990 with 95 percent national technology, are being built there.

The project became possible thanks to the work being accomplished by the National Space Research Institute, INPE, together with the National Scientific and Technological Development Council, CNPq, which completed 20 years of existence and commemorated the event Monday with a ceremony at Sao Jose dos Campos and with an exhibition of materials and equipment in the area of astrophysics, meteorology and remote sensing.

The INPE was created in 1961, when a group of pioneers in the Aerospace Technology Center, the CTA, subordinated to the Ministry of Air, proposed to the federal government the creation of a civilian organization linked to the CNPq for the purpose of eliminating the technological lag in the area. There emerged then the former National Space Activities Commission, which on 23 April 1971 became the INPE. At this time, 1,051 employees work there, of whom 69 are doctors, 130 are masters, 268 have bachelors' degrees and 584 are technicians. The main administration is located in an area in the aerospace complex of Sao Jose dos Campos, and to these installations are added other equally modern installations in Sao Paulo, Cachoeira Paulista, Atibaia, Natal, Fortaleza and Cuiaba.

The technological training of the INPE for planning and developing the first Brazilian satellites began in July 1972 when the institute began the daily reception at its station in Cuiaba--the geographical center of South America--of the pictures from the U.S. satellite Landsat, which provided valuable information on use of soil, harvest forecasts, environmental pollution, deforestation, reforestation and mineral reserves, at a cost of $200,000 per year. The U.S. Government, according to information by the institute, should shortly turn over the commercial exploitation of remote sensing satellites to private enterprise, which will raise the prices paid for those services, prices today considered only a "token." That is the reason for the need to launch the Brazilian satellites.

Brazilian scientific capability is already at least 4 years ahead of government expenditures: The Brazilian Space Program has been waiting for money since 1978 but it was only last Monday that the allocation of nearly $850 million during a period of 14 years beginning January 1982, was announced. Of that money, 70 percent, nearly $566 million, will be allocated to the Space Activities Center, the IAE of the Ministry of Air.

The IAE is developing the Satellite Launch Vehicle, VLS, a carrier rocket 16.5 meters long with four stages, the last of the "Sonda" family, whose program has been in progress since 1964 when Barreira do Inferno in Natal was created. Of the money allocated to the IAE, nearly $283 million will be channeled into the construction of a modern satellite launching base in the municipality of Alcantara in Maranhao along the shores of Sao Luis Bay. The government of that state has already declared an area of 520 million square meters to be of public domain "for the purpose of expropriation."

The INPE will have the task of planning, building and developing the satellites with the sum of $284 million. Of that money, only 15 percent will be used to purchase equipment abroad. The director of the institute, however, explained that after the launching of the first four satellites, the country is going to acquire the complete "knowhow" of the construction of those technologically sophisticated devices and it will be passed on to private national industry.

The program foresees the launching of four satellites beginning June 1990, the final launching scheduled for December 1944. The first two, which will be launched with a space of a year in between, will be weather satellites. They will weigh nearly 120 kilos and will reach an orbit of 800 kilometers from the earth. They will collect information for the forecast of crops, frosts, floods and weather data.

The last two satellites will be launched in June 1993 and June 1994. Each of them will weigh nearly 150 kilos and will reach an orbit of 650 kilometers above the earth. Their function will be to perform remote sensing over all of national territory, which will allow the discovery of new mineral and petroleum deposits, even forecasting the potential of each one.

Another INPE project is the construction of a laboratory for rocket fuel research, which is already being built in Cachoeira Paulista in Paraiba Valley. This laboratory will be responsible for the discovery of more powerful liquid propellents to fuel the gigantic rockets which place the satellites weighing more than a ton at a height of more than 36,000 meters in a geostationary orbit [as published; presumably means 360,000 meters]. At the same time, the INPE is performing research with solar cells for the purpose of developing the energy that will be used in the operation and maintenance of the equipment carried by the satellite.

8908
CSO: 5500/2290

BRIEFS

GULF COMMUNICATIONS MEETING--Abu Dhabi, 26 Aug (QNA)--The representatives of three Gulf countries--Qatar, Bahrain and the UAE--have ended their 2-day meeting to discuss the means of implementing a project to link the three countries and Saudi Arabia with a coaxial cable. The project will cost 50 million dirhams, or about $14 million, and will strengthen direct communications between these countries. During the meeting, an agreement was reached to provide support lines once the direct lines linking the region have been established. This will ensure efficient communications. Communications requirements for the cable departments for the next 10 years were also discussed during the meeting. The UAE proposed a working paper on the special technical bases required to operate the coaxial cable between the countries. An official source at the UAE communications authority said it has been decided to discuss the technical details of using the coaxial cable in telephone calls between the countries. It will be discussed during a meeting that will be held later and which will be attended by information representatives from the countries of the region. They will study the needs and requirements for television transmissions in the concerned countries. [Text] [GF261435 Doha QNA in Arabic 1108 GMT 26 Aug 81]

CSO: 5500/2295

BRIEFS

TELEVISION REPEATER STATION--The repair and maintenance unit of the voice and vision of the Islamic Republic of Iran, Shiraz, has reported that the Bavanat television repeater is operational and that Bavanat citizens can now watch television programs of the voice and vision of the Islamic Republic. The television repeater will be used for a 6-month trial period. [Text] [GF110636 Shiraz Domestic Service in Persian 1430 GMT 10 Aug 81]

FARS TELEVISION COVERAGE--Effective 13 August, QOTBABAD, in the Jahrom area, and QIR VA Karizn District, in the Firuzabad area, have come under television coverage by the vision of the Islamic Republic of Iran. [Text] [GF132042 Shiraz Domestic Service in Persian 1430 GMT 13 Aug 81]

CUTBACK OF TRANSMITTERS TIME--[Communique issued by Voice and Vision Shiraz Center on 17 August 1981] In his exalted name, the esteemed residents of Fars, Bushehr and Kohkiluyeh va Boyer Ahmad are hereby informed that the transmitters of this center will be off their air after the midnight news and will resume broadcasting at 0600 in order to economize on spare parts and power and to fight the economic embargo. The officials in charge of mosques are requested to broadcast the morning Adhan from the mosques' loudspeakers for the convenience of our sisters and brothers. With thanks. [Signed] The Voice and Vision of the Islamic Republic of Iran, Shiraz Center. [Text] [GF171615 Shiraz Domestic Service in Persian 1430 GMT 17 Aug 81]

CSO: 5500/5516

BRIEFS

SATELLITE STATION--[TANJUG "Pool" item] Accra, 26 Aug (GNA)--Ghanaian television viewers now have the opportunity to view live various events from overseas on their sets. This is possible thanks to the successful completion of a series of tests on Ghana's satellite station at Kuntunso near Accra. Built with a 5.72-million dollar loan from the Export Development Corporation of Canada, the station will provide Ghana with large capacity, high quality and reliable external telecommunication system on a 24-loan [as received] basis. It will access the Atlantic Ocean satellite in the internal system and also provide pre-assigned circuits for telephone, telex and telegraph to France, West Germany, Britain and the United States. [Text] [LD270504 Belgrade TANJUG in English 0900 GMT 26 Aug 81]

CSO: 5500/2295

PANAFTEL LINK WITH SENEGAL IS OPENED

Monrovia THE SUNDAY PEOPLE in English 2 Aug 81 pp 1, 8

[Text] THE Pan African Telecommunication link between Liberia and Sierra Leone was Friday formally opened by the Liberian Head of State, C-I-C Samuel Kanyon Doe and Dr. Siaka P. Stevens, President of Sierra Leone.

Speaking at his Executive Mansion office in Monrovia, Head of State Doe said the occasion was the continued determination of Africans to bring into reality, greater unity, solidarity, progress and development through communication.

He said it further demonstrated the Liberian Government's desire to span new areas of cooperation and to strengthen the bonds of understanding between African nations.

"In this endeavour," Head of State Doe said, "we are striving to decolonize the African Telecommunication System by making it possible for us to communicate with each other without going through Europe."

The Liberian Head of State described the event as "a major achievement toward strengthening the friendship between Sierra Leone and Liberia and for promoting the objectives of the Mano River Union."

C-I-C Doe said Liberia was continued to make progress in its telecommunications network and added that the efforts were aimed at achieving the goals of the United Nations Resolution which declared 1978 — '87 Transport and Communication decade in Africa.

He said Government was endeavouring to extend communications facilities incldng telephone, cable and telex to the rural areas, in addition to developing an effective rural broadcasting system.

At the formal commissioning of the telecommunication link, Head of State Doe and Dr. Siaka Stevens exchanged warm greetings and briefly discussed some bilateral issues of interest to both countries.

Earlier, Posts and Telecommunications Minister, Major (Dr.) George Boley also exchanged greetings with Sierra Leonean Minister of Posts and Transport, Mr. Kebbie.

The occasion was witnessed by the officials of Government including PRC Secretary - General, Col. Abraham B. Kollie, Minister of State for Presidential Affairs, Major (Dr.) Harry Nayou and Information Minister, Lt. Col. Gray D. Allison.

CSO: 5500/5068

INTEGRATED SERVICE DIGITAL NETWORK: PROBLEMS, PROSPECTS

Rome NOTE, RECENSIONI, NOTIZIE in Italian Jan-Mar 81 pp 7-15

[Article by Professor of Engineering D. Gagliardi, director of the Higher Institute of PT (Posts and Telecommunications), Rome: "The New Telecommunication Services and the Integrated Digital Network: Problem Areas and Outlooks"--lecture delivered on 5 February 1981 at the ceremony inaugurating the 1980-1981 courses of the Higher School of Telecommunications Specialization]

[Text] Summary

The present note was the subject of the inaugural lecture for the Telecommunications Specialization Course for engineers given at the Higher Institute of PT.

The problems that telematics poses to the managers of telecommunications services are examined, and the actions undertaken by the PT Administrations of the ECPT [European Conference on Posts and Telecommunications Administrations] to cope with them are illustrated.

Next are considered the considerations motivating the PT Administrations to set themselves the objective of building an Integrated Service Digital Network (ISDN) capable of performing both the traditional services and the new telematics services, with the use of single, multiservice terminals.

The foreseeable scenario of evolution of the networks toward the ISDN is outlined, with the first phase in this evolution stated as the building of specialized networks capable of upgrading the existing ones and hence of permitting, in an economical way and with different performance characteristics, the operation of new services.

Hon Minister, Hon Subsecretary, Officials, Ladies and Gentlemen,

To all the personalities here gathered who have wished, by their presence, to honor the inauguration of the courses of this Higher School of Telecommunications Specialiation for the 1980-81 academic year, I offer the sincere thanks and warm appreciation of myself as well as of all the staff of the Higher Institute of PT and of the Ugo Bordoni Foundation, which, as is known, collaborates with the Institute itself in research activities.

In their very well-received welcoming addresses, the Hon Minister and the General Director discusses, in very effective summary, the main points of the history of this Higher School, which year after year, with work perhaps a bit obscure but certainly worthy, has contributed to the training of so many telecommunications specialists, who have then gone on to put their preparation and competence to use in the most various public and private organizations.

I will certainly not overlook the fact that a profound modification of the structure of this school now appears necessary in order to give it a new impulse and greater conformity to the present necessities. I am confident that such modifications will be achieved quite quickly.

Nevertheless I am convinced that even in the present conditions, the School, thanks to the dedication and zeal of those--the Board of Directors, the instructors and the entire staff-- who work within this structure, will still be capable of meeting the expectations and, this year too, giving the young people who with trust and enthusiasm are rolling up their sleeves to spend 6 months with us everything that is necessary for their entry into the world of work.

It is with this thought that, again thanking everyone present, I declare open this School's 1980-91 academic year.

The Hon Minister, in his address, presented to us a very effective and complete panorama of the fundamental points relative to the lines of development of telecommunications in the coming years, and also delineated the essential aspects of Italian telecommunications policy, touching on all the subjects of greatest importance and current interest.

We all listened with keen interest and the closest attention to what the Minister communicated to us, in view of the great current interest and importance of the topics dealt with.

For my inaugural address, which will touch upon the most important problem areas of the telecommunications services and networks, there could not have been a better introduction: the panorama presented by the Hon Minister constitutes for my talk a clear, effective and solid starting-point, one that will facilitate--and not just a little--the task that I am about to carry out.

There is now under way the process of transformation of our society, as well as all industrially advanced societies, for that matter, from an era dominated by movement of materials and persons to an era dominated instead by the production and movement of information. Communication is therefore tending to take on a predominant role in all sectors of activity as well as in the private lives of individual citizens, decisively conditioning their efficiency and security.

With an often used but meaningful expression, we can say that we have now entered into the "era of the information society."

Great volumes of information, of the most various kinds (voice, data-images) and with the most diverse destinations (from person to person, from person to machine and from machine to machine), have to--and in future will have to even more--be exchanged rapidly, economically and securely, and will obviously have to have special characteristics of quality, depending on the case.

The development of data-processing has indubitably fueled and helped to increase the necessities of communication, but on the other hand the development of data-processin has itself furnished--along with telecommunications--the very tools needed for meeting the necessities of communication.

In particular, in order to avoid overburdening and complications of hardware and software (with consequent reduction of reliability and flexibility), there has now been a transition--or at least there is a trend in that direction--from families of computers based substantially on a self-sufficiency of processing capacity and memory (leading to the end result of computers of very large dimensions and capacities) to computer families of, as it is usually put, "horizontal"-development type: in this case, the processing and memory capacity is distributed and allocated principally where the information originates or is used. Computers of lower power, sited in various places, are thus called on to interact with one another and to interact also with a large number of more or less "intelligent" terminals, which in turn are located in still other places. The interaction between computers and between these terminals obviously occurs through the means of telecommunication, which thus become an indispensable support of the information systems.

Thus remote data-processing, or telematics, is born. But data-processing is not limited, as described up to this point, to becoming for the telecommunications networks a special customer that dictates conditions of service of performance characteristics: it enters, with its technologies and its functions, as a protagonist in the world of telecommuncations itself (terminals and networks), on account of which it is perhaps not too bold to conclude that data-processing and telecommunications are now two sides of the same reality.

In making use of the means of telecommunication, the special customer, data-processing, could not escape the general rule already stated--the pursuit of conditions of economy, quality, security and secrecy adequate for the types and volumes of information to be transmitted. The public telecommunications networks (telephone and telex) existing at the time when these needs began to be manifested very often did not make it possible to satisfy any of the conditions first enunciated.

Therefore, in order to meet the needs of data-processing in some way with adherence to the conditions first enunciated, the private networks were born--"closed" in that they were not connectable to the public network, and "limited" in that they were for particular groups of users.

Such networks, which today often extend beyond the national territory and take on international and even intercontinental dimensions, can be built at a speed unthinkable for the big operators of public services, both because they use existing infrastructures, because they are not designed with long-term objectives, and finally, because very extensively detailed specific experiences can be made use of that derive from the sectorial nature of such organisms, which are not forced to distribute the economic, design and management capacities over a wide range of diverse activities.

These networks normally use circuits leased from the operators of the public telecommunications services, while the terminals and switching equipment are installed and operated by the organization that runs the network.

At times, the national norms provide that switching equipment must be furnished by the operator of the public services. In any case, though, it is certainly an unsat-

isfactory situation for the operator of public telecommunication services, especially if, as tends to happen, it is protracted in time and extended to a large number of networks: the operator tends to be transformed into a supplier of means of telecommunication, without contacts with the operation, without the possibility of achieving a network optimization that would balance out the operations general needs, and especially, without obtaining the proper economic compensation as between a low-traffic operation and a valued high-traffic-volume operation.

The situation would be made even more difficult if a foreseeable network using satellites for specialized services were to take on the connotations of a private network --that is, if it were built outside the sphere of the normal operators of public telecommunication services. A network of that kind would be designed to offer--for a particular category of business usage--a whole series of possibilities of communication in a particularly integrated form, and more specifically, both possibilities already offered by the present earth-bound networks and possibilities not yet satisfiable by means of those networks; one definitive aspect of such a network has to do with the fact that the information would be transferred "from one roof to another" of the various users, thereby completely bypassing the earth-bound public networks' system, even as regards the simple leasing of the means of transmission.

This scenario as delineated (closed private networks, earth-bound and via satellite) brings out a situation that goes by the name of "attack on the telecommunications monopoly," or--a less dramatic expression--privatization of telecommunications." We might wonder how and why a situation of this kind has been developing. The causes are obviously many and of various kinds; if we want to give an answer to the question here, certainly a partial answer, we can say that "the operators of the public telecommunications services have not normally been in a position to satisfy with due promptness the new requirements posed by data-processing, fundamentally because of the fact that because of their mission and their mandate, they did not feel they could set themselves the objective of satisfying an operation that is limited and concentrated in several parts of the territory, while inversely, at least as a matter of principle, they would have to make themselves capable of satisfying a potential usage that in any case would be scattered over the national territory and would thus have to cope with the considerable magnitude of the financial commitments involved.

But for some years now, the operators of the public telecommunication services have been carrying out a more open and dynamic strategy, aimed at rationalizing the situation and gradually promoting a recovery of the operations that today are comprised in the private networks.

The fundamental point of this strategy starts from the consideration that since the attack on the monopoly has a character and extent that go beyond the competencies of the individual countries, the measures to be adopted fall within the broad outlines agreed upon among the PT administrations of the various countries (at least among those belonging to the same geographical area); and differing attitudes on the part of the various countries with regard to this phenomenon would disorient operations, producing unforeseen attitudes and possible unnatural traffic flows. A "telecommunications policy" at least on the level of Europe is called for, and coherent technical actions should be carried out that are sufficiently well agreed upon in their nature and in their times of implementation.

The organism through which it is being attempted to carry out this European policy is the ECPT, to which the PT administrations of 26 European countries belong.

The strategy decided on provides, as already stated, for a defense of the monopoly not on positions of barricading or immobilism but, on the contrary, on the basis of positive and concrete actions, carried out dynamically and aimed at timely identification of the operation's needs and implementation of the best means for meeting them.

The public networks have inherently the great advantage, for operational purposes, of making possible a larger possibility of connection (national and international), provided that the terminals to be connected adhere to identical codes; and it is therefore a matter of equipping them to provide the required performance characteristics--of quality, availability, speed and secrecy--and to that extent there will no longer be any interest in using the private networks, so long as the tariffs are set very carefully in order to make the public service preferable from the economic point of view also.

In detail, we can say that the strategy can be considered divided into the following actions:

(a) developing and improving the new services and facilities already initiated, and accelerating the startup of those new services for which potential utilization can reasonably be foreseen. In other words, it is a matter of getting ahead of demand and channeling it, instead of following it.

It should also be emphasized that the services and the facilities are associated here since for the purposes of these considerations, substantial differences and demarcations are not taken note of, even though it is obviously possible to give different definitions for the "services" and the "facilities."

(b) making the best possible use of the existing networks in the first phase, so as to obtain from them the performance characteristics necessary for the new services that it is thought to adopt. In cases of manifest technical impossibility or economic unsuitability, it will be necessary to provide in a timely manner for the building of appropriate specialized public networks. Such networks, while always making use of a more or less large part of the infrastructures of the existing networks, provide for substantial diversifications in some parts of plant, and in particular, they take on the character, in the user's view, of substantially different and separate networks.

(c) intensifying and accelerating the process of digitalization of the telephone network, gradually achieving integration between the transmission techniques and the switching techniques, so that a structure (IDN [Integrated Digital Network]) will be available that is immediately usable in some of its parts for the specialized networks also but will be intended in the long run to serve as a common support for many services and facilities, both present and future, and to be transformed subsequently into the Integrated Service Digital Network (ISDN).

The "actions" listed here lead immediately to several reflections:

(a) The first and most important one is that the various actions indicated should not be considered as events to be studied and achieved independently of one another. On the contrary, a single and coordinated whole is involved: each action has to be integrated with the preceding one and take the following one into account. Furthermore, the various actions are not necessarily subsequent to one another: in a way, they re-

present elements of a continuous evolution, one that is already in progress, for that matter, and that will begin to settle down probably during the 1990's.

(b) The second reflection concerns harmonization of the norms. The vast range of services that is taking shape and the multiplicity of systems that can be foreseen for bringing them into existence could lead, among the various countries of Europe, to differences that might be substantial in their modes of implementation, in the operational procedures and in the performance characteristics that will be furnished to the users, as well as substantial technical differences among the various systems. These diversifications could in the future make difficult, or at any rate expensive, the extension of the same services to an international basis, decisively frustrating the policy objectives set.

A "harmonization" of the national specifications for both of the aforesaid sectors (that is, services and systems), at least on a European basis, seems, for this reason, particularly useful.

The opening--absolutely necessary at times--of services of an experimental character or, in any case, of limited extent, with standards not yet harmonized, will always have to take into account the possibility of an eventual adaptation of the standard to the subsequent harmonized norms.

In this regard, the European norms work on the ISDN merits particular mention. The ECPT, aware of the importance of having available, within a short time, a "harmonized" norm on this subject, has assigned the highest priority to the studies related to it, with the objective--an ambitious, difficult, but also exalting one--of having several basic norms ready as early as the first months of this year, and almost all of the necessary norms by 1984.

(c) The third reflection has to do with research.

The technological developments and the consequent necessities of making use, in brief time intervals, of new generations of network systems and structures poses urgently, to the various operators of telecommunication services, the problem of applied research and development, a problem that cannot be left entirely to outside institutions and firms, for economic reasons but also because of the consequent impossibility for the operators themselves not only of making appropriate choices but also simply of mastering the subject that is their very reason for existence. Hence the necessity of investing in research activity in an adequate and increasing manner, and seeking, where possible, opportune links with other administrations.

The "COST" [expansion unknown] research projects, which concern research coordinated among several countries of the "enlarged" Community area, are a good example of what can be done in the sector.

(d) The fourth reflection concerns the problem of the terminals. Until some time ago, the function of a terminal equipment installation was clear: the installation was designed exclusively for transforming the information in a manner adequate to the transmission means.

There was no doubt that such terminals remained within the domain of the telecommunication service operators, and it was equally indubitable that the construction of them was the task of the telecommunications-apparatus factories.

With the new services and with the advent of remote data-processing, we are witnessing more frequently all the time today a substantial change of the situation: the terminals incorporate with the telecommunication functions already cited also information-processing functions, to a more or less broad extent, and often within a total unit that is not easily divisible, not only at the level of general conception but also at the circuit level itself.

For the telecommunications industry, the consequence of this has been a new competitor, and for the builders of system apparatuses, the necessity to take account of the requirements, sometimes stringent ones, of the telecommunication-services operators, who--rightly--have to see to it that whatever is planned for the functional procedures of the telecommunication networks is available.

In addition to the specific problems posed by each individual service with regard to terminal regulation, problems that can in a way be summed up as the search for an optimal condition for distribution of intelligence between terminals and network, the new situation under examination here poses for the terminals problem areas of a general nature, concerning:

--the properties of the apparatuses;
--the limits of the norms;
--the limits for maintenance;
--the conditions for approval testing;
--the possibility or advisability of the telecommunications operators' devoting themselves also to /information-processing activity/, whenever the service that it is intended to offer to users, especially to the general run of nonspecialized users, comprises and provides for, as a fundamental support activity, a certain amount of processing of the information itself.

The attitudes of the various countries toward these problem areas is sre still quite divergent, in view of the different norms and procedures in force also. Nevertheless, one cannot help but note that there are strong trends toward "privatization," albeit cautious and controlled by this sector.

Having thus examined the general considerations about the strategic lines for a coordinated policy on the evolution of telecommunications, it may now be advisable for us to go on to several more specific matters relating specifically to the Italian situation, always with reference to the fundamental "actions" identified earlier.

Specialized Networks and Services

First of all, it should be stressed that considerable development of the "data" services is to be expected, with increasingly intensive and sophisticated utilization of telematics; as the European-level forecast studies (carried out by the Eurodata Foundation) clearly indicate, the "data" terminals in Europe will have to go from about 700,000 at the end of 1979 to about 850,000 in 1983 and over 1.5 million in 1987, with about an 8-fold traffic increase between 1979 and 1987. On the other hand, the tendency toward increasing use of higher-speed terminals is clearly confirmed: whereas in 1979 the most widely used terminals are those of 300 bit/sec (37 percent) and 1,200 bit/sec (32 percent), in 1987 the most widely used terminals will be those of 2,400 bit/sec (30 percent) and 9,600 bit/sec (23 percent).

The Italian situation is well in line with the European forecasts stated above.

In view of these development forecasts and the necessity of providing, with the public network, adequate performance characteristics capable of satisfying, economically, the requirements of the operation, however it may be distributed throughout the territory, it has seemed indispensable, in practically all countries, to provide for the building of specialized networks for data, to be used not only for the "data" ("telematics") traffic referred to above but also for the other possible new services that may eventually prove to be especially favored by networks of the kind.

In line with these trends, a specialized public network has been planned in Italy too, for a data service of advanced type, using both circuit-switching and burst-switching and coherent with the introduction of the digital techniques, as well as with gradual introduction of the integrated network.

This network is therefore to be understood as a "bridge" solution, of a dynamic character, with a clear evolution toward the ISDN of tomorrow, of which it will constitute an integral part for a very long time.

From the first phases of its building, the organization of the network and the fundamental technical choices have been in harmony with such principles.

The network architecture is articulated on two hierarchical levels:

(a) a higher level (primary network), articulated on central exchanges specialized for data, designed to perform the national and international transit functions and to and to handle also the terminal traffic of the users in its operating area, directly connected to these central exchanges, with dedicated lines.

(b) a lower level (secondary network), articulated on central exchanges designed both for telephone traffic and for data traffic, designed to carry out the functions of usage collection, concentration of the traffic related to it, handling of the internal traffic of the operating area, and routing of the transit traffic.

In the practical building of these structures, precedence will be given to the burst-switching part.

For the initial service phase of the new network, which should go into service toward the end of 1982, it is expected that about 20 percent of data usage should be through these new structures (that is, about 20,000 users, including 15,000 using circuit-switching and 5,000 using burst-switching. For 1990, it is predicted that about 40 percent of the usage (100,000 users) will be through the structures described here, with a significant percentage decrease in use of the closed private networks.

Along with the data services mentioned, many other services are foreseen for the more or less near future. Some of these are still telematics applications, but because of their particular characteristics and the vast range of potential usage involved, they might well take on the character of public services in themselves, or at least "facilities" that involve and are necessary for other services. The new services and facilities that can be identified today cover a wide range of applications in the areas of data-bank information requests (interactive and broadcast videotex), transmission of texts, images and graphics (teletex, facsimile, video-lento, remote copying), transmission of monitoring signals (telesignalling, telemonitoring, remote alarms, telemedicine), teleconferences, videoconferences, videotelephones, etc.

A description of these services, even if a summary one, would certainly be beyond the scope of this talk, in view of the time reasonably available to us. I will therefore limit myself to stressing the fact that all the new services referred to are being subjected to close evaluation by the European PT administrations. Many of them already have in progress, or will shortly begin, experimentation for those services that seem most easily achievable with the present network structures and that also give promise of ample usage development in the short term. The following services in particular fall into this framework: videotex, teletex, facsimile, video-lento and videoconference.

With regard to the Italian programs, it can be declared that 1981 should see the beginning of an experimental phase for the services listed above, in accordance with programs that are now sufficiently well-defined.

I would like to devote just a few words to the teletex and facsimile experiments, which will be conducted within a "unified" framework, considering the two services as complementary aspects of the more general problem of text transmission, which constitutes an important and decisive part of the "office-automation" process and of the future "electronic mail."

The special services deserve a brief separate mention. These are understood today as a "block of traditional and new services" to be offered to particular users, within a "multiservice" view of communications.

Let us recall that multiservice communications are those in which the user can have a choice among speech, written messages and screen images, with the more or less complete possibility of alternations in the course of the same connection.

The problem that can be posed today is whether a specialized national public network should be provided for the special services, a network that would have to be developed through satellites, with terminal stations at the points of usage, in view of the present impossibility of the local and long-distance earth-bound network's furnishing, under the economic conditions that are possible, the entire block of services that it would be thought to include among the "special services."

For a reply to such a question, it is necessary for the time being to refer to a "first generation" that falls within the 1980's.

For this first generation, most of the traffic to be expected should have an international character, inasmuch as it will involve mainly internal traffic of large organizations (industrial, banking or political) of a multinational character--the only ones for which traffic volumes can be anticipated that are so intense and so differentiated as to justify the use of such a communication system.

A specialized national public network via satellite, for special services, would therefore not be either advisable or necessary in the 1980's, even if eventual videoconference-connection demand of a greater magnitude than can be reasonably envisioned today were to change the premises somewhat. It will naturally be necessary to keep track of the various actions of a European character that are under study today and to be ready to participate in them, so as to avoid the building of systems of a private type that would be developed outside the sphere of public management.

For the second generation of "special services," in the 1990's--not yet clearly identifiable today--it should be stressed that in that period, development of the earth-bound integrated-service networks will have reached such a point as to permit meeting the usage demand terrestrially also. This statement is absolutely not intended to suggest that satellites for special services will be useless at that time; if anything, it suggests that in the 1990's, satellites--including national ones--for special services will not be destined to form a self-contained specialized network but rather will constitute, by virtue of their exceptional flexibility and their "wide-band" capacity, an important, significant and unrivalled part of the ISDN integrated network, within a harmonized and appropriately optimized total system.

Digitalization and Integrated-Service Network (ISDN)

There has been a great deal of discussion within the competent international bodies (the ICCTT [International Consultative Committee on Telephony and Telegraphy] and ECPT) about the advisability of achieving an ISDN, with consideration of the advantages and disadvantages of such a structure. Table 1 presents several advantages and Table 2 presents several disadvantages.

Table 1 - Principal Advantages of the ISDN

1 - Economy in network costs
2 - Economy in utilization of equipment
3 - Flexibility in planning
4 - Lower risks from uncertainty of the demand for the new services
5 - Uniform network-access procedures and relative simplification for the user
6 - Considerable improvement of quality

Table 2 - Principal Disadvantages of the ISDN

1 - Greater sophistication of the equipment
2 - Difficulty of achieving optimal planning for all the services
3 - Serious consequences in the event of breakdowns of large magnitude
4 - Technical and legal problems deriving from the use of a single network structure for many services

The conclusion arrived at in both the ICCTT and the ECPT is that in the present state of the evaluations, evolution toward the ISDN seems to represent the most logical and advisable way of replying adequately, rationally and economically to the growing demand for communications of multiservice type.

The studies undertaken in this regard on a European and worldwide basis and the actions initiated or to be initiated are based on four very clear "guidelines"--specifically:

A - For a very long period, the ISDN will have to be able to coexist and interconnect it the various existing specialized public networks.

B - At the time of adoption of the ISDN, it must not excessively penalize, from the economic point of view, the most widespread services.

C - The introduction of new services and performance capabilities will be a continually evolving process, and the network will therefore have to have an "open" character.

D - The local network is the key to the integrated network and requires the biggest investments; consequently, integration of services at the local-network level is of special importance.

In accordance with these guidelines, there is the consideration that digitalization of the transmission lines and of the central switching offices for telephone service remains the obligatory starting-point for achieving integration of the varius services, while we may not overlook the fact that despite the certain development, considerable and at times "explosive," that the other services may undergo in future, the telephone services (especially in the countries that are far from saturation conditions) will still continue to be the fundamental and impelling part of the entire telecommunications complex.

The problem of acceleration of digitalization of the telephone network has therefore arisen in all countries--not only with a view to the future ISDN but also on account of the objective advantages henceforth offered by the digital transmission and switching structures.

These advantages are related to:

--a fundamental economy, as compared with the analog approaches, with regard to switching and transmission (over short and medium distances), with prospects of sharper cost decreases over time because of the component-cost effect;

--better basic quality, because of the independence of the transmission process from accumulation of distortions with distance, and because of the greater "equivalent" stability that it is possible to achieve;

--the possibility of using the digit frequencies made available to the network (particularly the digit frequency of 64 Kbit/sec for the telephone channel) for a whole series of services different from telephony; this is an especially useful and economical capability for those types of information that are already digital at the source and have a natural band-reduction in the digital type of transmission.

The digitalization of a network (in the two functions of transmission and switching) involves establishment of an "Integrated Digital Network" (IDN).

The IDN can be defined as "a network that is digitalized as far as the local central offices and in which the analog/digital changeovers are carried out only at the two extremities of each connection--that is, in the local central offices."

Elimination of the intermediate analog/digital changeovers brings further economies and quality improvement that are added to the "basic" ones already pointed out.

As regards the overall economy of investment for an IDN as compared with an analog network with switching by electromechanical techniques, a reduction of about 50 percent is normally postulated by the specialists of the various countries, with reference to the equipment only (that is, without taking into account the economies resulting from reduction of volume, lower consumption, the considerable simplifications in installation of the central switching offices, or of the costs of the transmission equipment and the other infrastructures).

In any case, it must be pointed out that in the first startup phase of the digitalization process, the aforesaid economic advantages will be far from evident, because of the startup investments and the numerous, serious and complex problems raised by coexistence with the existing analog network.

It must be said further that the IDN will lead also to variations in the conception of the higher network structure, because of the differing dimension and functional structure of the digital automatic switches and the difference in the geographical siting of them. Thus, with reference to the National Telephone Regulation Plan, the technical-economic advantage of elimination of transit switching in the sector centers, with the establishment of direct beams between the urban-network centers and the district centers, seems clear. Furthermore, the number of district centers will probably decrease. An increase in the percentage of transit traffic through the highest hierarchical levels of the network is also probable.

The pace of digitalization differs in the various countries, depending on the state of development and the age of the existing analog network; and the industrial purchasing policy that it is intended to follow differs also.

In Europe, the pace is highly variable: in some countries, no further contracts with industry for analog transmission and switching equipment will be made as from 1981-1982, and in others, the process of digitalization has scarcely been started.

The digitalization process in Italy is being pursued very decisively, though with adherence to a necessary series of restrictive conditions as presented in Table 3. We can say that the degree of digitalization reached today and the existing programs put Italy among the European countries with the most intensive levels of digitalization.

Table 3 - Guiding Concepts for Digitalization

1 - Utilization of the potential capacities of the existing analog systems, depending on technical-economic evaluation.

2 - Utilization of the existing analog systems to completion of their useful life, depending on technical-economic evaluation.

3 - Consideration of the service-growth programs and of any eventual delays that might be caused by waiting for development of new techniques.

4 - Adherence to the conditions of service quality for the user and of the necessary degree of reliability.

5 - Attention to the problem areas of operation management and maintenance.

6 - Attention to the industrial problem areas.

Let us give here a few figures relative to the Italian situation. In the district framework, it is expected that the degree of penetration of digital circuits--about 40 percent today--will reach 70 percent by 1985, with the use both of physical carriers and of radio bridges. The optical carriers will be developed in parallel, starting with the urban setting.

As regards the compartimento network, starting next year there will be a gradually increasing introduction of systems of 140 Mbit/sec in cable and of 70 Mbit/sec by radio bridge.

In the intercompartimento network, and also starting next year, systems of 140 Mbit/sec will be introduced both in 2.6/9.5-mm coaxial cables laid long ago and via 11-GHz radio bridges (if there are no impediments of a technical nature); and from 1985, introduction of large-capacity digital systems (565 Mbit/sec) in highway-laid 2.6/9.5 coaxial pairs will be started.

As regards switching, a time-period law for supplying the digital-technique central offices has been provided for; this law provides for the gradual changing-over of production, within the current decade, from electromechanical to electronic. Starting from the beginning of the 1990's, all equipment supplied to the central offices will therefore be of digital type, and by the end of the 1990's the extent of the digital central offices should practically equal that of the electromechanical central offices in service.

The process of integration between the transmission and switching techniques will begin with the transit central offices, starting already at the end of this year or the beginning of next year; by the end of the 1980's, the integration process will be considerable for the transit central offices, and will not be negligible for the local central offices either.

To return, regarding certain aspects, to the studies on the ISDN of the future, it should be said that, in accordance with the fundamental guidelines cited above, the architecture planned for the ISDN provides for two categories of functions: one (designated A), of basic type and 64 Kbit/sec, is provided for in all the terminals and all the central offices; another (designated B) is carried out by special add-on equipment that can be sited at a limited number of points. The important thing is that the local network permit the possibility of giving access to such special equipment, through the receiving of a special selection signal; once access is obtained, the remaining signaling information between terminal and special equipment will pass into the 64-Kbit/sec channel.

Within this framework and in conformity with the necessity of interconnection with the other specialized networks, steps are then taken toward the ISDN through a multiservice network, which in the last analysis consists in interconnecting the various networks with an initial integration at the local level only, leaving more intensive integrations for the subsequent phases. In other terms, it can also be said that the multiservice network is composed of a complex of networks that provide for different services but that utilize a single user line and a common signaling system; the complex of networks thus interconnected will therefore appear to the user as a single network.

Finally, a word about the process of evolution toward the ISDN. This process can be viewed from various angles:

--as regards the choice of the services to be integrated at each phase of the evolutional process;

--as regards the methodology of territorial extension;

--as regards the implementation times.

It is to be expected that in all the aspects listed, the process of evolution will take different courses in the various countries, because of the differing local situations, such as:

--the age of the existing equipment;

--the degree of development of the existing specialized networks;

--the forecasts of potential usage expansion for the new services.

--the conditions of management of the various services.

A certain rapprochement of the various positions is to be hoped for, though, so as not to delay too much the time--foreseen today as around the year 2000--when there will be an integrated digital network of international type, developed at least over Europe, and capable of transporting the same types of information and permitting conversations between multiservice terminals no matter what countries they are in.

Having thus arrived at the end of my talk, I must thank you and apologize: thank you for the courteous attention you have given me, and apologize for having taken so much of your time.

My intention was to show that in this phase of great transformation of the structures of telecommunications and of demands for new services, there is indeed a coordinated design that guides and interconnects the various actions, but a design that is flexible, always ready to adapt, with the fewest misfires possible, to the requirements of society and to the proposals of technology, both of which are continually variable.

If I have succeeded in this purpose, I shall consider myself satisfied.

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TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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REPORTS OF TELECOMMUNICATIONS COMMITTEE SUMMARIZED

Bombay THE TIMES OF INDIA in English 23 Jul 81 p 4

[Text] New Delhi, July 22 (UNI)--Immediate import of about 100,000 telephone instruments for improving the telephone services in the four metropolitan centres is understood to have been recommended by the high-powered Sarin committee on telecommunications.

These telephones should be given to those who ordinarily make more than 3,000 metered calls per quarter. The telephone department could also consider levying an extra charge for such replacement to pay for this purchase, the committee is reported to have suggested.

The committee, which was set up in May last to make comprehensive review of the functioning of telecommunication services in the country and recommend measures for improvement, has so far submitted two interim reports.

The import is necessary to give urgent relief to heavy users, pending indigenous production of a better instrument which may take some time.

In its first interim report, the committee is reported to have made a number of other recommendations on the special services, telephone directories, better training of operators, maintenance of equipment and the steps required to avoid breakdown of a large number of telephones during monsoon.

According to the committee, priority attention should be given to improving the functioning of the special services like 197 (director enquiry), 198 (fault repair) and 199 (assistance) as the users' experience with these calls determines the image of the department. The services have to be manned round the clock. To combat problems created by absenteeism, a fully trained operator reserve should be created immediately to meet any emergency. The operators' training should also be diversified.

Exchange Equipment

To avoid the pressure on the directory inquiry service, the committee has suggested installation of in-house computers in the four metropolitan districts to provide computer-aided facilities to the operators.

If telephone directories are issued every year without fail at least in metropolitan systems, it would considerably ease the situation.

The committee also feels that inspections of all subscriber telephone installations should be carried out by telephone inspectors regularly. If inspection is carried out periodically it will lead to substantial improvement in the functioning of such fittings and better service.

Telephone instruments requiring major repairs must be replaced immediately and repaired only at a central place instead of in the premises of subscribers.

The committee has also desired better maintenance of exchange equipment so that frequent faults are avoided. Adequate spares stocks must be built so that equipment could be restored quickly.

The committee wants special telex maintenance groups to clear faults expeditiously. Telex requires priority attention as most of the subscribers are engaged in economic or governmental activities and the telex service produces high revenue and financial surpluses.

CSO: 5500/7161

LOK SABHA TOLD OF 10-YEAR SATELLITE PLANS

Bombay THE TIMES OF INDIA in English 20 Aug 81 p 13

[Text]

NEW DELHI, August 19 (PTI): Space-borne tracking stations and new launch ranges for bigger and powerful rockets have been proposed under the next ten-year space programme expected to cost Rs. 854 crores.

A report on space programme profile for 1980-90 placed in the Lok Sabha today said India would become "self-reliant in launching operational satellites for remote sensing" before the end of this decade.

In the next ten years, the space department plans to have operational augmented satellite launch vehicles, (ASLV) and polar SLV (PSLV) capable of launching 600-kg. remote-sensing satellites in sun-synchronous orbit from Indian ranges.

The space development decade envisages development of ASLV by 1983 and PSLV by 1987. India's first remote-sensing satellite will be launched from abroad in 1984 and an Indian-built communications satellite (proto-INSAT) in 1986.

Two multi-purpose satellites, INSAT-1A and INSAT-1B will be launched from the United States in 1982 and 1983; INSAT-1C will be launched in 1989 from the U.S.

The ten-year profile also envisages launch capability for geosynchronous missions.

CSO: 5500/7184

INFORMATION MINISTER TELLS TV, PRESS DEVELOPMENTS

New Delhi PATRIOT in English 19 Aug 81 p 5

[Text]

THE micro-wave linking of TV stations between Delhi and Bombay is expected to be completed next month, Information and Broadcasting Minister Vasant Sathe told the Lok Sabha on Tuesday, reports PTI.

The circuit between Delhi and Calcutta is expected to be completed in March next, and those between Delhi and Srinagar and between Bombay and Pooma and between Jullundur and Amritsar are expected to be completed in September, May and June next year respectively.

The micro-wave circuits were intended for exchange of programmes between TV stations and for feeding relay transmitters, he told Mr Jagdish Tytler.

The Minister said the TV centre at Trivandrum is expected to be completed by 1984-85.

The centre will cover whole of the Trivandrum district and about 60 per cent of Quilon district.

He said the Kerala Government and the 'KELTRON' (Kerala Electronics Corporation) have submitted a proposal for establishing four transmitting stations in Kerala with a single common studio at Trivandrum so that the entire State could be covered.

The House was informed that two 16 MW film production units proposed to be set up at Calcutta covering eastern region and at Bangalore covering southern region are expected to start functioning by November this year.

The production centre in eastern region will produce films in Bengali, Oriya, Assamese Manipuri and other regional and tribal dialects of the region. The production centre in the southern region will produce films in Tamil, Telugu, Kannada, Malayalam and other regional and tribal dialects of the southern region. Some of the 16 MM films will be produced in tribal dialects depicting their life and culture.

The themes to be used for production of these films are still to be finalised, the Information and Broadcasting Minister, Mr Vasant Sathe told Mr Giridhar Gomango in a written reply.

Mr Sathe said government is committed to the freedom of the press and would not like to interfere in the management of the news agencies which are in the private sector.

News agencies are, however, free to merge or unite as they think best the Minister told Mr Ramavatar Shastri.

He said employees of the 'Hindustan Samachar' had in a memorandum submitted to him on 12 May, demanded among other things, revival of Samachar, failing which the unification of Hindi news agencies on the pattern recommended by Kuldip Nayar Committee.

CSO: 5500/7183

MORE JAPANESE AID FOR TELECOMMUNICATIONS SOUGHT

Madras THE HINDU in English 19 Aug 81 p 9

[Text] Madras, Aug. 18--The Japanese Government has advanced to the Government of India so far loans amounting to 11.7 billion yen (about Rs. 35 crores) for implementing telecommunication projects. The first two loans of 9 billion yen (Rs. 27 crores) and 2.7 billion yen (Rs. 8.1 crores) have already been utilised and the Union Government is seeking the third and fourth loan from Japan for executing more projects.

Two officials of the Appraisal Mission of the Overseas Cooperative Fund of Japan, Messrs. H. Tanaka, Loan Officer, and S. Yamamoto, Engineer, who have been in India since August 13 have been acquainting themselves with the various projects implemented with the assistance of the first two loans.

The yen credit is intended for improving the telephone switching equipment in telephone exchanges and for modernising telecommunication through microwave network.

The two Japanese officials were accompanied by Mr. B. G. Talleo, Director (Coordination of Projects), P and T Directorate, Government of India.

They came here on Monday from Calcutta and visited the cross bar telephone exchanges at Mambalam and Madras Harbour and the site for the proposed electronic exchange in Nungambakkam. They left for Delhi in the evening.

CSO: 5500/7182

POST OFFICE TO SEEK BIDS FOR SECOND SATELLITE STATION

Auckland THE NEW ZEALAND HERALD in English 14 Jul 81 p 3

[Text]

The Government has authorised the Post Office to call tenders for a second satellite signal receiving station to be built at Warkworth.

The station, likely to cost about $10 million, is expected to be completed by 1984 when an updated satellite will be brought into service by Intelsat, an international organisation of which New Zealand is a member.

No Break

The Postmaster-General, Mr Cooper, yesterday announced that the Government had approved recommendations by the Post Office on how to adapt to the Intelsat V satellite and a rapid increase in international communications through New Zealand.

The existing Warkworth antenna station would have to be upgraded to handle Intelsat V traffic, Mr Cooper said. The estimated $5 million refurbishment project would begin as soon as the second antenna was completed.

By building a second signal-receiving station, the Post Office can avoid a 14-week blackout on satellite traffic while the present antenna is upgraded.

More importantly, the new station will triple the number of satellite circuits available for international communications in the Pacific.

Relieved

With the annual growth in traffic running at 25 per cent—rocketing to 40 per cent last year—the Post Office is relieved at the reduction in pressure on the system which the new station will allow.

But engineers claim the relief will be relatively short-lived.

"We believe we will have to be thinking about either more submarine cables or more antennae by the end of the decade," one senior engineer said.

This would depend on the demand, although present indications were that another extension to the system would be needed.

Advantage

The engineer said the new antenna would be isolated from the existing nine-year-old structure at Warkworth.

However, there were advantages in building it alongside. Control gear to rotate the antenna in sequence with the satellite would be housed in the same building, for example. This would avoid a more costly duplication.

The two antennae would also be able to supply a single microwave feed from a point just south of Warkworth to the Post Office transmission tower on the Waitakeres and from there to Auckland.

Possible locations for the new station were limited in any case, the engineer said. Reception from the Intelsat IV satellite was restricted to the northern part of the North Island.

Specialised

He said he was not expecting any tenders from within New Zealand for the contract.

There was only a small group of companies in the antenna supply business. One of these was the Nippon Electric Co. of Japan, which had built the existing Warkworth station.

CSO: 5500/9017

BRIEFS

TELCO EXPANSION--Port-of-Spain--The Trinidad and Tobago Telephone Company (TELCO) is now finalising plans for a major rural development programme from which scores of districts in the country will benefit. The two-year expansion programme will take direct dialling to some 400 villages and small towns throughout the country and extend the telephone service to thousands of new subscribers. Prime Minister, George Chambers was told of the plan earlier this month at a Cabinet meeting in a report by Public Utilities Minister, Mervyn deSouza. TELCO officials are now working on a detailed breakdown of the expansion programme to Senator deSouza. Chambers had requested information on TELCO's plans for extending its telephone services to various districts in St Patrick, following his recent ten-day tour of the country. Senator deSouza explained that expansion of the telephone service in St Patrick was part of the multi-million dollar rural development programme on which the company was working. A TELCO spokesman said that by next month, a tender will be awarded for work to begin on the project. He said the rural development programme would be undertaken simultaneously with the on-going job of upgrading the service in key urban areas of the country. It is understood that adjustments have had to be made to the rural development projections in the light of recent complaints from various districts about inadequate or total lack of telephone services. During his tour of St Patrick, the prime minister heard complaints from several villagers who felt they had no hope of getting telephones. Similar complaints were made to TELCO officials during the accounting to the taxpayer meetings. [Text] [Bridgetown THE NATION in English 17 Aug 81 p 15]

CSO: 5500/7546

BRIEFS

'PETRA-JNA' EXPANSION PROJECT--Amman, (PETRA)--PETRA-JNA has started the implementation of a project aimed at boosting and expanding its transmission station. The project will increase the area of transmission of the present station in order to convey the voice of Jordan to new regions in the world and to enable various other world news agencies to receive the agency's transmission. The new project, which will begin its experimental transmission during the next 2 weeks, will cover Africa and the eastern parts of Asia. Under this project, a new 10 kw-strong transmitter and a rotating logarithmic antenna will be installed. Transmission of the present station covers Europe, North Africa and the Arab homeland by means of two 10 kw-strong transmitters installed at the beginning of 1979. [Text] [JN160911 Amman AR-RA'Y in Arabic 16 Aug 81 p 3]

CSO: 5500/4730

SERIES OF TELEVISION, TELEPHONE CONTRACTS REPORTED

London JAMAHIRIYA REVIEW in English No 14, Jul 81 p 18

/Text/

THE LIBYAN Jamahiriya's determination to establish an efficient countrywide telecommunications network has been underlined by a series of recent contracts for the supply of television transmitters earth satellite stations and a telephone cable network.

In May it was reported that France's Laboratoire Generale des Telecommunications (LGT) had won an extension to its existing contract for the supply of television transmission stations, bringing the total contract value to $23.6 million. LGT is now to install 40 stations, of which nine are covered by the extension and the rest by the initial contract, awarded in June last year. Work is for completion in 18 months, with each station to house a 1 kW transmitter and ancillary equipment. LGT will also be training Libyan staff.

The new station will allow Libyan television's Arabic language channel one to be to broadcast countrywide. The area covered by channel two, which broadcasts in English, French and Italian, will not be extended until at least 1983: priority will go to expansion of the radio network. Under the new 1981-85 development plan, $2,000 million has been allocated for the expansion of the Jamahiriya's broadcasting services.

Sweden's L M Ericsson has won a $17 million contract for a telephone cable network in the north eastern town of Derna, for completion in 30 months, *Middle East Economic Digest* reported on 1st May. Work entails laying cable to serve about 10,000 subscribers. The Derna municipality has ordered a new exchange to handle the new subscribers. The development plan foresees the expansion of the country's telephone network to provide six phones per 100 residents.

Japan's Nippon Electric Company has won a contract to supply satellite earth stations for telephone communications and television broadcasts, with final delivery in 23 months, it was reported early in June. No details of the contract have been disclosed.

Libya wants a series of earth satellite stations in order to gain maximum benefit from the communications satellites that the Arab Satellite Organisation (Arabsat) plans to put into orbit. In May it was reported that Arabsat had awarded France's Aerospatiale a $130 million contract for the construction of the three satellites in the joint Arab project. Two of them will be put into orbit, with the third being held in reserve. Each of the two will provide 8,000 telephone circuits and six television channels. There will also be a 'pan-Arab' channel and a community channel which low cost ground stations will be able to receive. Construction of the satellites with take about 30 months, and the satellites will be put into orbit either by the European Space Agency's Ariane rocket or by the Space Shuttle.

The new Libyan development plan provides for a special emphasis on the acquisition of technical skills by Libyans, and this is reflected in a recent announcement that Greece is to train 480 Libyans in telecommunications. They will attend schools in Greece run by the state-owned Hellenic Telecommunications Organisation, which under an earlier agreement has already undertaken to train 200 Libyans.

CSO: 5500/4729

SECOND TELECOMMUNICATIONS ANTENNA INAUGURATED AT NKOLTANG

Libreville L'UNION in French 27 Jul 81 pp 1, 4

[Article by Evoung Bitegue]

[Excerpts] On Saturday 25 July at Nkoltang, at 1045 hours, Prime Minister Leon Mebiame cut the green, yellow and blue ribbon at the threshold of the new technical annex to the "2 December" station.

The prime minister, who came to Nkoltang aboard a special train, arrived at the site of the ceremony about 1000; he was welcomed by the director of the Gabonese International Telecommunications Company (TIG), Mr Dominique Hella Ondo and several local dignitaries.

Equipped and installed by the French company, Telspace, with a diameter of 11.8 meters and costing 500 million of our francs, this second satellite telecommunications antenna--according to Mr Souah Thomas, general manager of OPT [Postal and Telecommunications Office]--is pointed toward a geosynchronous satellite specially adapted for digital telecommunications. However, before providing the specifications and describing the importance of this new jewel which will now make possible direct communication with the United States, the FRG, Switzerland, Canada and Spain, Souah first briefly sketched the history of satellite telecommunications in Gabon. In more than one way that history coincides with the creation of the TIG in 1972. In fact, it was at that same time, said the OPT general manager, that our country adhered to the international satellite telecommunications organization (INTELSAT). Joining INTELSAT led to construction of the first Nkoltang antenna, which was christened "2 December" station when it was inaugurated in 1973, and which provides for the transmission of about 100 telephone circuits, dozens of telex circuits, and also the broadcasting and reception of television pictures. Turning more specifically to the second antenna, Souah justified its construction by the temporary suspension of operations of the first antenna, which, in order to meet INTELSAT's technical requirements, must be modified. At the conclusion of his remarks, Souah emphasized that construction of the second antenna is part of a vast program to develop Gabonese telecommunications, a program which among other things calls for the restructuring of the national telecommunications and television network, utilization of regional satellites, digital wireless beams, optical filament cable for urban networks, the utilization of solary energy, etc.

In economic terms, the minister added, this second telecommunications antenna will facilitate communications between Gabonese businessmen and foreign commercial agents. In cultural terms, the new broadcasting and reception facilities will improve the capabilities of our media to bring news and information to the masses.

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CSO: 5500/5066

PLEDGE TO REHABILITATE, IMPROVE TELEPHONE NETWORK

Accra DAILY GRAPHIC in English 13 Aug 81 p 1

[Article by Nelson Duah]

[Excerpts]

A TOTAL amount of ₵344 million is to be spent on an expansion and rehabilitation programme to improve the present internal telephone network in the country.

The programme, which is to enable the network to cope with the external influx of communication, will be undertaken in phases.

The first phase of the programme estimated at ₵50 million has already been awarded on contract.

The President, Dr Hilla Limann announced this when he commissioned the $14.6 million Earth Satellite Station at Nkuntunse near Accra yesterday.

Dr Limann said the first phase will include a National Telephone Switching Centre in Accra. It will also involve the replacement of existing local automatic exchanges in Accra Central and Cantonments with new and larger capacity exchanges.

Among the many innovations in the programme also is the conversion of existing manual exchanges to the automatic system.

The President said: "microwave radio links are also being installed in the Western, Central, Eastern, Volta and Ashanti Regions between Takoradi, Tarkwa, Obuasi, Dunkwa, Bekwai and Kumasi."

He said his Administration would not be satisfied with the Satellite Station unless the country's poor internal telephone system was improved.

The President emphasized: "Our ultimate objective is easy and quick communication at home and also directly with all member states of the OAU and in fact with every corner of the world."

Dr Limann called on all Ghanaians to check anyone destroying or stealing cables in order to protect "our collective property and national assets."

Dr Limann talked to the Deputy Governor-General of Canada, Mr Justice Brian Dickson and Sir Ian Gilmor, Lord Privy Seal of the United Kingdom.

This was after he had cut the tape to unveil a plaque to declare the Station commissioned.

Mr Harry Sawyerr, Minister of Transport and Communications, in his speech, said telecommunications technology "is developing so fast and new and better electronic equipment are being invented and installed in Europe and America almost every decade."

CSO: 5500/5071

PROGRAM FOR FURTHER DEVELOPMENT OF TELEVISION AND BROADCASTING

Moscow VESTNIK SVYAZI in Russian No 4, Apr 81 pp 3-5

/Article by Ye. ye. Dobrovol'skiy, deputy chief, Chief Directorate of Space and Radio Communication, USSR Ministry of Communication/

/Text/ Every year on 7 May, our country celebrates Radio Day, which has become a holiday for all communicators. Radio, which was invented 86 years ago by the great Russian scientist Aleksandr Stepanovich Popov, is now a part of the daily life of modern man. The role of radio broadcasting and television in the life of our country increases continuously. In terms of efficiency, radio broadcast and television far exceed newspapers and journals, and are the most widespread and effective media for information, propaganda and communist education of the workers.

In his greeting to the country's communicators, Secretary General of CC CPSU and Chairman of the Presidium of the Supreme Soviet of the USSR Comrade L.I. Brezhnev noted that projects to develop the material base for radio broadcasting and television have been completed. New systems have been created for transmitting television programs using satellites. Wire broadcasting has been developed to the utmost, and the number of broadcast relay points has increased by a factor of 1.3. This was the estimate given for the development of radio broadcast and television facilities for the past five-year plan. The five-year plan for the introduction of radio broadcast station facilities has been met ahead of schedule, by the 110th anniversary of V.I. Lenin's birth; seventy percent of the increase in facilities was achieved by conversion and augmenting existing equipment and by installing new equipment at areas which were freed as the result of conversion.

The development of the network of multi-program radio broadcast stations using frequency modulation in the meter waveband continued. Wire broadcast (PV) radio points numbering 18.5 million have been added, and the multi-program PV has been increased by 15 million points.

The new "Raduga," "Ekran" and "Gorizont" satellites have been put into operation to transmit central television (TV) programming, making it possible to provide television for the populace in eastern and western Siberia. The assignments for putting television transmission stations with power of one kw and higher into operation have been fulfilled by 127 percent. Eighty-nine powerful TV transmitting stations and 550 low-power television relays have been put into operation. A network of TV transceiving stations in the "Ekran" system has been organized. Substantial work has been done on the introduction of color television.

The basic directions of economic and social development of the USSR for 1981-1985 and up to 1990, which were confirmed at the XXVI CPSU Congress, have outlined a large-scale program for developing radio broadcasting and television more fully and for improving their quality. Specific tasks have been established, including the further development of television and radio broadcasting, introducing a second nationwide television program, developing color television and stereophonic radio broadcasting, and making wider use of satellites for organizing multi-program television and radio broadcasts.

The Communist Party and the Soviet government are devoting unceasing attention to the development and perfection of radio broadcasts. Our entire country is now served by radio broadcasting. The population holds over 75 million radio receivers, and about 82 radio broadcast points. The existing network of radio broadcast stations using long, medium, short and meter waves is the most diverse and one of the largest in the country in terms of technical facilities used. During the 11th Five-Year Plan, this network will be developed and perfected significantly in all of the radio broadcast bands. It is now possible to receive at least two broadcast programs everywhere, and as many as four or five can be received in large cities.

There are now nine nationwide central broadcast programs, using all radio wavebands in an integrated fashion. The first central program is the basic national social-political and artistic program. The first central program has been broadcast in five zones since 20 October 1980, which has allowed this basic program to be received everywhere at convenient local times. The average daily capacity of each of these is twenty hours.

The second central program--"Mayak--is broadcast on a 24-hour basis, and is hugely popular with Soviet listeners. The "Mayak" program covers eighty percent of the country, which was made possible by using satellites to relay it to radio broadcast stations. The "Mayak" program is now fed to many cities throughout the country over high-quality wideband satellite radio broadcast channels around the clock.

The third central program--general education, literature and music--is broadcast for an average of seventeen hours per day. This program reaches primarily the population of the European portion of the USSR. There are plans to implement new technical facilities during 1981-1985 and increase significantly the radius in which the third program can be heard, transmitting it to several zones within the country.

It is planned for the 11th Five-Year Plan to increase the capacities of radio broadcast stations in all of the broadcast bands, mainly by conversion, technical-equipment, augmenting existing radio enterprises, and installing new transmitters in areas which are freed. All of this will produce a significant technical and economic effect, increase the price per channel-hour of transmitter operation, and increase the volume of production as measured monetarily. The number of service personnel will generally remain unchanged which, with an increase in production, will lead to a substantial increase in labor productivity at a particular enterprise.

The synchronous broadcast networks will continue to be developed in the current five-year plan. Type SRV-7 7-kw transmitters supplied by Czechoslovakia will be installed for this purpose at many television transmission stations. This will make it possible

to obtain a significant technical and economic effect with low expenditures (since existing production area, power and structures are used). The deployment of transmitters directly within cities makes it possible for the field intensity of the valid signal to exceed the noise level significantly, thus improving reception quality of medium-wave radio broadcast programs in cities.

The network of multi-program broadcast stations operating in the meter waveband using wideband frequency modulation (MW-FM stations) will be developed further during the 11th Five-Year Plan. About seventy new MW-FM stations will be installed, with the total number in the country exceeding 500 stations. New "Dozhd'-4" four-program stations will be installed in addition to the "Dozhd'-2" two-program MW-FM stations. The planned increase and modernization of the network will make it possible to provide high-quality two-program broadcast to over eighty five percent of the population of the country, and four-program broadcasting for about eighteen percent of the population, by 1985.

Stereophonic programs are now being broadcast over the MW-FM network in 26 cities throughout the country. As we know, stereophonic sound reproduction has better radio broadcast quality than monophonic, and the sound of voices and musical instruments is more natural, with the sensation of their special separation. Stereophonic radio broadcast transmission is planned for 80 more cities during the new five-year plan.

It is planned to use communication satellites for radio broadcast, particularly to feed central stereophonic programs to remote regions of the country.

The development of the technical facilities for wire broadcasts, which together with radio broadcast forms the unified national broadcast network, will continue during the 11th Five-Year Plan. Combining the powerful radio broadcast transmission network, in which there are over 75 million receivers, and the branched PV network, which has about 82 million radio broadcast points, has made it possible to provide wire broadcast to 98 percent of the country's population.

The main area of development and perfection of wire broadcast is that of accelerating its transition to a system of multi-program broadcasting. There are now over 40 million radio broadcast points to which three broadcast programs are being fed. The republic capitals, kray and oblast centers and large industrial cities of the country are provided with multi-program broadcasting. The main difficulty in the way of developing multi-program broadcasting is the large gap between the capabilities of the radio network and its provision of three-program loudspeakers, which the USSR Ministry of the Communication Equipment Industry is clearly not producing in sufficient quantity.

It is planned to increase the number of radio broadcast points during the present five-year plan by at least 20 percent and to continue developing the system of multi-program broadcasting in the cities down to the rayon centers, and to initiate its development in rural regions.

The most important task in developing and improving technical wire broadcast facilities is to automate the many rural radio broadcast centers (RBC), which improves their technical and economic indicators significantly. Nine thousand radio centers have already been automated, which has made it possible to eliminate about 11,000 operating personnel and increase the length of radio center operation to 17-18 hours per day. There are plans to automate 2,500 radio stations during 1981-1985, which will free another 2,700 workers.

The domestic television transmission network is the most widely branching and one of the largest in the world. It now includes over 3,500 TV transmitting stations, 455 of them having transmitters between 5 and 50 kw, with the rest being relays with power of up to 100 kw. By dint of great effort, communicators have been able to create a branching network of long-distance TV channels over radio broadcast and coaxial cables and satellite communication lengths in rapid fashion, providing high quality television program feed from their point of origination to the transmitting stations throughout the country, and making it possible to exchange programs.

Central television programs are now transmitted from Moscow on a 24-hour basis. The first central television program (I TV)--the basic national information social-political and artistic programs--is now received throughout the USSR, where over 86 percent of the population of the country lives. There are now over 75 million TV receivers in the country, of which 7 million are color sets.

Nearly every Soviet family living in areas where television programs can be received has a television set.

Since the territory of the Soviet Union stretches from Kaliningrad to Kamchatka and includes 11 time zones, the times at which the I TV program is broadcast differs from Moscow legal time. The I TV program has been broadcast in five zones since 20 October 1980; now people who live in different time zones of the country can watch the same television transmissions from Moscow on the same day as the residents of the capital, but at convenient local times.

The basic areas of economic and social development of the USSR entail the requirement for introducing a second social-political and artistic national television program during the 11th Five-Year Plan. This program (which is now called the fourth central program) is now being transmitted only to two zones. Further development of the integrated use of ground and space radio-television systems will allow communicators to fulfill the important assignment of the Communist Party concerning the introduction of five-zone broadcasts of the second national television program during the 11th Five-Year Plan as well.

The third central television program is for training, education, and popular science. The area in which it can be seen is also expanding gradually. Besides Moscow and the Moscow Oblast, blocks of teaching transmissions are relayed to many capitals of the union and autonomous republics, kray, and oblast centers, and some cities of oblast subordination.

The basic areas of economic and social development of the USSR for 1981-1985 and up to 1990 require that color television be further developed. It should be emphasized particularly that the introduction of color television was an important stage in the perfection of television broadcast, a qualitative leap which has made it possible to increase its level sharply and allowed television viewers to see the world in its natural colors. The advantages of the joint Soviet-French SECAM system, which is used in the Soviet Union, are that, in contrast to other color television systems, the color subcarrier is frequency- rather than amplitude-modulated, which makes the system insensitive to amplitude-frequency distortions of the circuit.

In order to support the introduction of color television, communicators have done a great deal of work to improve the electrical parameters of existing equipment. All powerful TV transmitting stations and most low-power relays now support color program transmission. Work will continue during the 11th Five-Year Plan to improve the transmission network further and to use a number of technical devices in order to improve color program quality. This includes the TV signal regenerator and TV signal level meter which are used for automatic measurement and monitoring of the video signal at any point in the television circuit, etc.

The 11th Five-Year Plan envisions wider use of satellites to organize multi-program television. A major achievement of scientific-technical progress was the startup of the "Orbita" TV broadcast system, using a satellite and 20 ground receiving stations, by the 50th anniversary of the Great October Revolution. This system now has 90 active "Orbita" stations, and has made it possible to provide the central I TV program to many remote regions of Siberia, the Far East, the Far North, and Central Asia. There are no plans to increase the number of "Orbita" stations during the 11th Five-Year Plan, but work will continue on the improvement of this satellite system, which will be used to a great extent for satellite telephone-telegraph communication and transmitting newspaper columns in addition to receiving television programs.

In 1976, the USSR launched the "Ekran" geostationary TV broadcast satellite. This satellite was new in principle and differed from existing satellites in its high-power on-board relay equipment. This equipment supports the transmission of central color television programs to a network of simplified transceiving stations located in populated areas of Siberia and the Far North. Signals are transmitted to the "Ekran" satellite at 6,200 $\pm$ 12 MHz using frequency modulation. The sound accompaniment is sent on a 6.5 MHz subcarrier. The receiver antenna of the "Ekran" satellites receives these signals, which are amplified by the receiver in the relay. The 200 W on-board transmitter, which uses frequency modulation in the 702-726 MHz working band, transmits the signals to the earth by means of a phased-array antenna.

At first, a total of 60 ground transceiving stations were in operation in the "Ekran" system, which is very large, encompassing over 40 percent of the Soviet Union. This extremely economical system now has 1,000 such stations in operation, which provide TV broadcasting with the required quality. It is planned to develop this system further during the 11th Five-Year Plan, since it can be used to provide television at low expense to remote, inaccessible, sparsely populated areas with few residents, where television would not reach for tens of years using ordinary ground technical facilities. It is planned to increase the number of transceiving stations in the "Ekran" system by a factor of several, bringing their number to several thousand by the end of the 11th Five-Year Plan

The new "Moskva" TV broadcast satellite system was created late in the 10th Five-Year Plan, and is being developed during the 11th. This system includes a ground transmission station, a "Gorizont" high-capacity satellite trunk and a network of ground receiving stations. A central television program plus sound is sent from the television center in Moscow over a terrestrial connecting link to a ground transmitting station. The signals are transmitted to the "Gorizont" satellite in the 6 GHz band using FM. The signals received aboard the satellite are amplified, frequency-converted and then transmitted back to the earth by the 4 GHz 40 W FM transmitter

through a highly directional antenna to the intended service zone. On the ground, the signals arrive at the receiving station of the "Moskva" system, where they are amplified, converted and sent to a local powerful TV transmitting station, low-power relay, or to the cable distribution network.

The "Moskva" station is much simpler than the "Orbita." The size of the dish used in its antenna system is only 2.5 m instead of 12 m, there is no complex guidance system, and a relatively simple input device is used. This has been achieved by using a high-power transmitter aboard the "Gorizont" satellite and a directional antenna. The "Moskva" receiving station can operate unattended, which means that practically no additional staff is needed to develop this network. A model of the "Moskva" station has been developed with a backup set of equipment and simplified automatic satellite tracking system in order to improve reliability. New "Moskva" receiving stations will be installed in various areas of the country by 1985.

Work will continue to increase the number of high capacity ground TV transmitting stations and to install low-capacity TV relays. It still remains to create and assimilate new multichannel satellite systems in the 12 GHz band which can be used to increase central as well as republic multiprogram television broadcasting.

The most important task assigned by the 26th CPSU Congress is to increase labor productivity. At the beginning of the five-year plan, the labor productivity, or cost per worker (calculated for 1980) in radio broadcast, television, and radio communication was 11,923 rubles, and 4,769 rubles for radiofication. It is planned to provide an increase in the labor productivity of radiofication workers of 10 percent, and of 4-5 percent for radio communication, radio broadcast, and television workers by the end of 1985. This important and difficult task can be accomplished successfully only by unceasing introduction of automated, unattended, remote-controlled equipment, and a substantial improvement of the entire organization of operation of technical facilities, which is provided for in the development plans for all types of radio and television broadcasting.

The task of radio broadcasting and television workers is now to work as well and as productively as possible, expanding socialist competition under the slogan "Bring the Decisions of the 26th CPSU Congress to Life!", to fulfill and even over-fulfill the assignments of the 11th Five-Year Plan, thus making a worthy contribution to carrying out the decisions of the 26th Congress of the Communist Party of the Soviet Union.

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CSO: 5500/17

BRIEFS

NEW RADIO-TV TRANSMISSION TOWER AT ROSTOV-ON-DON--The tower of a new radio-television station--the highest in the North Caucasus--is about to be erected in the northwest section of Rostov-on-Don near the Temernik River. Specialists at the State Union Printing Institute of the USSR Ministry of Communication (GSPI) are developing the technical and economic foundation for this structure. The tower will be 340-350 m high, and will be almost twice as high as the existing tower. The guaranteed reception radius for television broadcasts will be 90-100 km. Citizens of Rostov and residents of surrounding cities and stations will be able to watch three television programs in color and listen to four radio programs. A future capability is planned for installing equipment at the station to transmit a fourth television program. An observation deck is planned at a height of 190 m, which will open a broad panorama of the southern city. /By K. Vladimirov/ /Text/ /Moscow VESTNIK SVYAZI in Russian No 4, Apr 81 p 23/ /COPYRIGHT: Izdatel'stvo "Radio i svyaz,'" 1981/ 6900

MOUNTAINTOP TELEVISION RELAY FACILITIES--Communicators in the Kirghiz are pioneers in using mountaintops as natural supports for television broadcast relays. A group of specialists supervised by former Hero of Socialist Labor K.N. Anan'yev has developed and fabricated equipment for relay stations. One of the "Yuzhnaya" relay stations of the Osh Radio-Television Center has been placed on the ridges of the Fergana crest in a small area on the Baubesh-Ata peak ("the father of five summits"). The task of the station is to relay television transmissions from Moscow for the southern Kirghiz. The station workers labor selflessly, thanks to which television transmissions are received from Moscow without interruption. /By A.G. Korytov/ /Text/ /Moscow VESTNIK SVYAZI in Russian No 4, Apr 81 p 29/ /COPYRIGHT: Izdatel'stvo "Radio i svyaz,'" 1981/ 6900

'OKOP' FDM CONVERSION EQUIPMENT--An "OKOP" unit has been put into operation on one of the communication mainlines. This is the standard conversion equipment for 60-3,600 channel FDM transmission systems. The system is intended for use at centers and stations of the primary mainline Ye ASS /unified automated communication system/ network, and its channels and group circuits are in complete agreement with GOST 21655-76. The equipment is at the state of the art. The parameters of the channels and circuits of the "OKOP" correspond to CCITT recommendations, and exceed those recommendations with respect to loading, noise, AChKh /amplitude-frequency characteristic/ irregularity, stability of characteristics, protection against audible transitions and amplitude response. Extensive use of the "OKOP" equipment in the conversion and construction of the primary mainline and zone networks will provide a significant improvement in the quality and reliability of PCh /audiofrequency/ circuits and channels. /By I.P. Irinina/ /Text/ /Moscow VESTNIK SVYAZI in Russian No 4, Apr 81 p 29/ /COPYRIGHT: Izdatel'stvo "Radio i svyaz,'" 1981/ 6900

STORED-PROGRAM RAYON RADIO CENTER--The first automated rayon radio center in the Sumskaya Oblast has been put into operation at the Lebedin rayon center. The modern achievements of domestic radio communication have been used here. Many suggestions were made during the course of construction of the radio center by local rationalizers--senior electrician N.T. Stepanenko and engineer B.G. Steblyanko. The use of electronic stored-program equipment with a high-precision clock is novel. The automated radio center provides high radio broadcast quality. All lines are tested every 10 minutes, and the operation of three rural automated radio centers is supervised. The required program is activated independently according to a weekly master program. /By V. Gol'dman/ /Text/ /Moscow VESTNIK SVYAZI in Russian No 4, Apr 81 p 29/ /COPYRIGHT: Izdatel'stvo "Radio i svyaz,'" 1981/ 6900

CSO: 5500/17

SET-UP, OPERATION, POTENTIAL OF EURONET DIANE DESCRIBED

Copenhagen DATA in Danish Feb 81 pp 27, 28, 30

[Article: "Euronet DIANE--What, Why and How?"]

[Text] Euronet DIANE is more than just a tool for data transmission. DIANE stands for Direct Information Access Network for Europe and the network gives the user access to 50 million references in 180 different data bases.

Euronet--the EC-based data network--is presumably regarded by most solely as a tool for data transmission. But Euronet is something more than this. What it is and for what and how it can be used will be described in greater detail here.

One of the European Communities' clearly stated goals is to further and develop the European information industry.

One element of this is the use of EDP-based information services, so-called on-line services. In 1970 a study of this use showed first that the use of these services by European firms and institutions was slight as compared with other industrialized parts of the world (especially America) and second that the majority of this use in the future would take place with the use of American services and that European services could be expected to be implemented only to a small extent.

At the same time it was also clear that information and easy and inexpensive access to it would be a necessary prerequisite for further development. The reasons for this situation were many, but the most important was that the technical facilities, i.e., international data transmission facilities, were not there and also could hardly be expected to be established in the near future. Unlike America, European telecommunications traffic is in the public domain and therefore partly independent of consumer demand, and although certain countries had established or had plans to establish a data network it would be a long time before these national networks could be united into an international network.

In order to ensure the access of European industry and research to these information services, the EC Commission decided in 1972 to establish such a network covering all the community's countries--the so-called Euronet, which was put into service in February 1980. The establishment itself took place in cooperation with the telecommunications administrations of the nine countries, in that about two thirds of the costs of establishing it (50 million kroner) had been paid by the commission and the rest by the telecommunications administrations.

Beyond this the communities contribute financially with (partial) financing of the annual operating deficit up to a certain maximum, about 30 million kroner the first year.

Aside from this financing the EC Commission is not involved in the network itself. Operation and the maintenance of it and everything in addition which has to do with network operations lie in the domain of the telecommunications administrations, including the fixing of prices, too. Prices and conditions for connection to the network are entirely up to the telecommunications administrations both at the national and international levels, although the commission's assistance has meant that prices for one thing are significantly lower than what has hitherto been true of similar traffic (40 to 50 percent) and for another are independent of distance and depend only on the connection time and the amount of data transmitted.

In addition to the telecommunications administrations and the commission, a third important group of partners is involved, the so-called host organizations or information centers, combined under the common designation DIANE, for Direct Information Access Network for Europe.

These hosts are organizations, institutions and private service bureaus which offer access to information in the form of so-called data banks and bases. In order to join the DIANE plan these have signed a "memorandum of understanding" with the commission, in which they bind themselves to offer this access on equal terms in accordance with the Treaty of Rome.

In practice this means only that price differentiation between users from various countries must not take place. It is thereby completely up to the individual host what it will offer and for what prices, so long as these prices are the same for users regardless of nationality.

Therefore, hosts compete among one another in both prices and service, which is supposedly to be considered an advantage from the viewpoint of the user. At the present time 24 hosts have joined, offering a total of just under 200 data bases and banks, largely within all subject areas, although the natural sciences are represented best. (See below under what is offered.)

The number of users for the time being is about 1400, just under 100 of them in Denmark, and about 25,000 calls per month are made to the network. It is anticipated that during 1981 about 2000 more users will join the network and that traffic will amount to about 60,000 to 80,000 calls per month.

The Network and Connection Capabilities

The network has been designed as a packet communications network according to CCITT Recommendation X25, largely based on the same technology as the French TRANSPAC national network. This technology was chosen on account of the fact that, over and above the political element, that it is a European technology, TRANSPAC at the time of the contract (1977) was the only operational network that followed international standards. A consortium led by the French SESA firm and the English LOGICA, Ltd. firm was responsible for the construction itself, although all the countries were represented by subcontractors, Chr. Rovsing A/S in Denmark.

The network is constructed around five junction points or PSE's (packet switching exchanges) in London, Frankfurt, Paris, Rome and Zurich, which are mutually connected to 48-Kbit lines. Connection of the remaining countries has been carried out by means of 9600-bit lines to PSE's from Copenhagen, Amsterdam, Brussels and Luxembourg, respectively.

The hardware at the junction points is based on two machine types.

The first, the so-called CP-50 processor, was specially developed for the purpose by Philips-CRT and is based on a series of microprocessors. The second is a common-access minicomputer, a MITRA 125. These two machines complement one another and together perform all network functions, in that the MITRA 125 forms the command unit which controls and supervises the CP-50, which is mainly occupied with "switching functions" and interfaces.

Each CP-50 is able to handle 480 terminals at a time. Both synchronous (X25's) and asynchronous terminals can be connected, as at each junction point there are in addition PAD (packet assembly/disassembly) functions by means of which asynchronous terminals can be connected to the network, here in accordance with CCITT recommendations X3 (for PAD) and X28, i.e., teletype compatible terminals. The following connections are possible independently of the mode of transmission and speed:

Asynchronous terminals	
100, 200 and 300 bits/s	via call connections
600 and 1200 bits/s	via closed circuits
Synchronous terminals	
2400, 4800, 9600 and 48,000 bits/s	via closed circuits

These connection capabilities mean that a total of about 300 terminals in existence on the market can be connected directly to the network, the majority via call connections, i.e., by dialing Euronet's national number in the public telephone network. When added to this is the fact that a "black box" interface has been developed with the financial support of the commission for suppliers who do not offer X25's, IBM, for example, and that various projects are under way for the further expansion of connection capabilities, including for the development of hard-copy logs for "page mode terminals" and DEVT's (data entry virtual terminals), it must be stated that from the user's viewpoint there are but few restrictions on connection capabilities.

If one terminal is already at one's disposal it is easy to get started, and if one must be purchased the investment is relatively small.

What Is Offered and What Does It Cost?

Information resources in the DIANE network consist of two types, data banks and data bases.

Data banks, sometimes called numeric data bases, are collections of factual information within various areas. For example, Euronet contains the following:

CRONOS--containing statistical information regarding the community assembled in time series, e.g., regarding imports, exports, balance of payment, unemployment and the like (about 600,000 series in all).

ELECOMPS--facts on electronic components (voltage, resistance, impedance, function, etc.) together with supplier possibilities.

KOMPASS--names and addresses, along with product specifications, for about 60,000 French firms.

PI--OECD's economic indicators.

Other banks contain, for example, mass spectra, chemical constants and toxic effects of elements and substances, etc.

Data bases, or more precisely, bibliographic data bases, contain so-called literature references. Popularly speaking, these are resumes of books, articles in the press and periodicals, conference papers, etc.

Such a resume will typically contain information regarding the author, title, publication reference, key words which characterize the subject area, and the like, often together with an abstract, i.e., five to 10 lines in which a summary description is given of the article's contents and what subject it concerns.

About 80 percent of DIANE's resources are such bibliographic data bases, largely within all subject areas, although the natural sciences are clearly covered the best. Chemistry, physics, medicine and the appertaining disciplines have a nearly exhaustive coverage of world literature, but EDP and electronics and the like are also well covered. The more humanistic disciplines, along with economics and law and the like, are weakest.

One has access to a significant amount of information by means of Euronet DIANE. All in all DIANE contains about 50 million references divided among about 180 different data bases. The size of an individual data base varies widely. The least extensive contain about 20,000 references and the most about two million.

These two million references can be searched in a couple of minutes by means of a dialog language in which one indicates and combines the key words which characterize a specific subject area, and by means of the references written out on terminals one then has the opportunity to procure the original literature.

The advantage is quite clearly in the saving of time. The perusal of periodicals for locating articles of interest is often time consuming and at certain times boring at that. Here one has the opportunity to locate articles which are with high probability in one's field of interest, quickly, simply and at low cost.

Although at first glance the cost perhaps seems high, experience and several analyses have shown that the method is clearly less expensive than traditional literature procurement.

The cost consists of the following components: 1. data transmission costs; 2. search costs; 3. cost of equipment, etc.

Data transmission costs are, as mentioned, independent of geographical distance and are based only on the amount transmitted and the duration of the call.

According to operating statistics a typical search in Euronet lasts about 15 minutes and about 200 segments of 64 bytes each are transmitted.

When using a call connection the price for this (including the value-added tax) is 7.50 kroner. Then the telephone toll must be added to this, i.e., a 15-minute call to area 01, which will be in the range of 1.50 kroner to 11.00 kroner. The price of the use of data bases varies from host to host and from data base to data base. The cheapest cost about 130 kroner per hour and the most expensive 700 kroner per hour.

About 100 kroner for a standard search can therefore be stated as a rough average.

But in a quarter of an hour several million references can be searched. Equipment expenses consist of the following: Euronet subscription; modem; terminal.

For call connections no installation charge is paid for connection to Euronet, but only a quarterly fee of 180 kroner.

Closed circuits follow the normal data element tariffs and modem prices are the normal ones as well. That it is to say that a 300-bit/s modem costs 507 kroner to install and 203 kroner per month.

Finally comes the terminal expense, which ranges from 1000 kroner and up in purchase price.

If one wants to avoid investment costs it is possible instead to make a search with the assistance of intermediaries, so-called information brokers. The documentation section at Danmarks Tekniske Bibliotek [Danish Technical Library] has offered such a service for many years, but other public institutions and private organizations also offer this service.

Only search costs themselves, plus a possible extra charge for intellectual assistance, are paid when information brokers are used.

Advantages and Disadvantages

The use of on-line information provides many advantages. The most important are the following: Time and money are saved. More complex searches can be carried out. Large amounts of literature can be searched. Information is procured when it is needed and not, as traditionally, by subscribing to periodicals in the hope of finding relevant articles. The information procured is relevant (as compared with the purchase of periodicals).

This said, it must be stated at the same time that on-line services are not without disadvantages and problems.

The disadvantages are first and foremost that: Only more recent literature is covered, generally only back to 1970. Not all subject areas are covered equally well. Various data bases can contain the same information (redundancy). It

takes about three months from the publication of an article until it is included in a data base.

In addition to the disadvantages concerning the information itself, there are also problems associated with the very use of DIANE. The biggest and more important, from the user's viewpoint, is that the information is spread out among 24 hosts who operate with widely different machines and systems. This means that several search languages often must be used if one wishes to use several hosts. Although the languages are relatively easy to learn it does take a certain amount of time and some training before one masters them.

Administratively the use of several hosts also means several manuals, several bills, several points of contact, several contracts, etc.

It is clear that an attempt has been made to remedy this from central quarters, i.e., the EC Commission. Partly by the establishment of a support group for all involved, the so-called Euronet Launch Team, partly by financing a number of projects with a view toward the goal of harmony. Thus a common search language has been developed, the so-called Common Command Language (CCL), that has now been implemented by seven hosts with five more on the way. In support of the further development of this, during 1981 a data base will be initiated in which the user can train himself in CCL, free of charge, at nearly the simple transmission costs.

Another example of efforts at harmony is the development of guidelines for the formation of user's manuals. Several initiatives are under way, including concerning central billing, harmonizing log-in procedures, etc.

The goal of this work is to make DIANE as homogeneous as possible from the user's viewpoint, so that all systems and bases can be interrogated by means of the same equipment.

Meanwhile there is a long way to go. For one thing it takes time to develop standards and for another there is no central authority in existence to compel hosts to implement these standards. Only the widespread backing of users can in the long term force standardization.

Other Use of the Network

Although the network is intended for searching for scientific and technical information (STI traffic), Euronet's capacity is far greater than what this traffic requires today (and for the next few years). By an arrangement between the commission and the telecommunications administrations of the 10 countries it has been opened up for so-called third-party traffic, i.e., the use of Euronet for traditional data transmission. At the present time a number of (international) organizations have already begun to use Euronet for this purpose, and more are expected to begin to in the immediate future.

For security reasons the procedures for the use of Euronet for ordinary transmission are different from STI use. Further information regarding this can be gotten from telecommunications administrations.

Future Outlook

Euronet has from the start been regarded as an open network. This means that the commission has in principle adopted the viewpoint that any country can join Euronet as long as it is willing to pay its share of the costs. Switzerland joined as of December 1980 and more countries, Scandinavian included, are interested in it.

Sweden, for instance, was the first country outside of EC which applied to join, as early as 1978.

That Sweden has still not joined in spite of the early application is due to several things. Partly an internal Swedish problem regarding payment, partly some discussion regarding its size, partly the method of payment. In addition, the joining of Switzerland has complicated the affair on the political plane, in that the Treaty of Rome's words regarding "non-discrimination" hold for Switzerland in relation to EC countries and for Sweden in relation to EC countries, but what about the Switzerland-Sweden relationship?

However, all problems should now be solved.

Payment itself is taking place in the form of a cash contribution, plus several research projects which are being carried out in Sweden for the commission, including regarding the marketing of on-line information. Payment is being made by the Swedish telecommunications administration and the Delegation for Scientific and Technical Information Supplying (DFI) in conjunction, and the Swiss problem has also been clarified.

How technical joining will take place, via Denmark or via Germany, however, has not yet been decided, but regardless of which technical solution is chosen it will be able to be established during the summer.

Finland has also officially applied to join and it is reported that Norway will also do likewise.

Of other countries it is possible to name Austria, Spain and Portugal, along with, of course, the new EC country, Greece, together with Israel and some Arab states. It can therefore be anticipated that DIANE's information resources will be augmented considerably in the future.

The word DIANE must be emphasized here, in that Euronet will presumably disappear as a network during the 80's as more and more countries construct national networks which are joined together. West Germany and England are introducing national networks in 1981 which are being joined together and to TRANSPAC in France, and several countries have similar plans. Regarding information resources, it must be mentioned, in addition to the fact that they will be augmented, that the trend quite clearly is going in the direction of more data banks and more data bases in areas now thinly covered, so that a balance will be established.

Perhaps especially interesting with regard to information resources is the fact that several projects concerning a union between Euronet and video text and view data systems are under way. Some problems must still be solved, but joining together is presumably possible in a couple of years.

Finally can be mentioned the possibility of the delivery of original literature via Euronet DIANE.

The location of information is as a rule only the first step for the user. The next step will be to procure the original document. Although libraries and the like are often able to do this in a few days, for many it will be an advantage if the document can be supplied by the host itself and via Euronet. The commission has therefore initiated a project concerning the digitization of documents and the development of a hard-copy log and a procedure for the delivery of these documents.

The first concrete results here were shown at a workshop in December in Luxembourg. The experiments were quite promising, although there still is some development to come and a few more political problems regarding copyright, for example, which must be solved. It is also unclear how expensive this form of document procurement will be.

Conclusion

There is hardly doubt whether on-line services will be an important element of the information base of organizations in coming years. All experience and market analyses indicate this and with the start of Euronet DIANE the door has been opened for increased European utilization of them--an opening which, thanks to EC initiative, has come considerably earlier than what would have been the case otherwise.

Further information on Euronet DIANE can be gotten, in addition to the telecommunications administrations, from the Danish host in Euronet, I/S Datacentralen af 1959, as well as from the Euronet Launch Team, B.P. 777, Luxembourg, telephone number +352 40221, which was established partly for this purpose.

8985
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REGULATIONS ISSUED ON PRIVATE RADIO STATIONS

Zurich NEUE ZUERCHER ZEITUNG in German 6 Aug 81 p 29

/Article: "Regulations for 'Free Radio' in Belgium"/

/Text/ On 5 July 1981 an ordinance of the Belgian Postal Minister went into effect in which, in dry technical and official jargon, the technical requirements governing free radio were laid down. Andre Andries, the responsible administrator in the postal ministry lists the most important regulations: "First, we define as 'local radio' every transmitter with a range of 8 km, that is one which covers an area with a diameter of approximately 16 km. Prime requirements resulting from this definition are that the transmitter may radiate a maximum of 100 watts and that the antenna may not have a height greater than 35 m. In addition, it is forbidden that the range of the transmitter be extended by any means such as, for example, by injecting local radio programs into the cable network which reaches over 80 percent of Belgian households."

Legalizing Action Transmitters

With this ordinance the free radio is on the way to official recognition and legalization. About 10 years after its appearance--usually for supporting actions in the area of environmental protection--and 5 years after Italy decontrolled the other, Belgian lawmakers are finally adapting to things as they are; however, not without reservations. The Federal postal minister and the two ministers of culture, who serve as overseers of the two national radio stations BRT and RTBF and who have to work out certification criteria relating to program content, have recently begun to differentiate "free" and "local" radio. Concerning the difference, the Flemish Minister of Culture Rika De Backer-van Okken says: "Free radio means that radio which is primarily dedicated to the relaxation of the listener, preferably the largest possible number of listeners over the largest possible area. This radio is in general not averse to commercial connections. The concept 'local radio' covers the radio that consciously limits itself to a clearly defined area. It will offer information to the local populace and promote communication inside the community addressed. This radio will thus not only provide relaxation but also reporting, commentary and education. Several of these stations will devote themselves to the entire populace of a region; others however address specific target groups such as youth, senior citizens, the handicapped or the sick."

Program Content Certification Criteria

In relation to the program-content certification criteria, which the two ministers of culture will be developing up to this fall at which time they will be laid before Parliament as proposed legislation, the distinction between "local" and "free" radio has the following meaning: "Local radio must not have any type of connection with commercial or other interest groups. It shall be effected by enthusiastic and capable collaborators who not only enjoy producing radio programs but who will also dedicate them entirely to the public good. Local radio should not be the voice of any particular group or persuasion. What guarantees can be demanded in connection with objectivity, I can not predict. However, the principle of rights in answer applies also to local radio. This will provide a basis for order."

Politicians face a big dilemma. For one thing, their starting position is weak because they are reacting very late to a condition which was allowed to develop undisturbed over a period of several years. Until now the public prosecutor's office has only moved against a number of small student and citizen initiative transmitters, but in no case has it prosecuted one of the large free radio stations operating in and around Brussels with a power of 1,000 watts and which quite openly acknowledge their commercial and partisan political connections.

For another thing, a show of outrage over the commercial and political activities of these stations does not generate credibility. At the beginning of this year, the state controlled radio stations were required to institute a reform which involved yielding a third of the transmission time for political information transmissions by political parties, unions, churches and several other special interest groups which will naturally openly propagate their own views. This means objectivizing programs. Further, the Belgian Government is currently resolved to transmit radio and television commercials over the national networks. The estimated annual income of 120 million francs is not for the purpose of providing the networks with additional funds for better programs but is intended as a contribution toward halting the astronomically high deficit in the national budget.

Squaring the Circle

Finally, the post and culture ministers are concealing a report which the Belgian Privy Council prepared in response to a law proposed by the liberal representative and newspaper publisher Frans Grootjans. The bill provides above all that in the certification of private radio stations no ideological or philosophical group can be discriminated against. In plain language: Political parties, city officials and opposition factions, unions and religious-charitable groups have equal rights to direct access to the free radio waves. In this the task of the ministers of culture in formulating the program content certification criteria is like squaring the circle. In particular Mrs De Baker-van Ocken has to say: "In the ordinance just discussed--that of the postal minister--the commercial advertising ban for local radio is included. In the proposal, among other things it is decreed that in the case of a violation, the license to transmit will be withdrawn. Also, in the proposed law which is presently being drafted dealing with commercial advertising in radio and television, an advertising ban is imposed on local radio. This proposal also provides penalties. As in the case of transgressing other laws, the responsible authorities must deal severely."

Andre Andries of the postal ministry categorically asserts: "We hope that the federal prosecutor will pursue and severely punish anyone who does not observe the regulations prescribed in the ordinance whether the offense be an exceedence of the transmission power limit or the failure to observe the advertising ban." Minister of Culture De Backer-van Ocken says finally in this regard: "I believe that in this manner we can guarantee that these local radio stations will actually be supported by those people who strive for the sociocultural development of their communities above all else.

Who Pays the Bill?

But: Who will really finance local radio? The ministers of culture have refused to provide subsidies and the postal minister requires for issuing the transmission authorization a fee of about 2,000 francs, the posting of a bond in the amount of 2,000 to 4,000 francs and an annual tax of 600 francs. Since the transmission authorization has to be renewed every two years, this is a costly affair for all small stations which serve only noble purposes. Therefore, people in the postal ministry admit, at arm's length, that one has to distinguish between commerce and traffic. But why not write down this difference quite specifically in the law?

Even more astonishing facts are revealed by closer inspection. Why have the ministries involved not considered it necessary to determine qualitatively and quantitatively by accurate empirical investigations among the populace the actual demand for free or local radio broken down according to sociological groups? Why does no one specify exact numbers of listeners and transmitters? All of these imprecisions and ambiguities will, in a country like Belgium, only lead to the generation of ordinances and laws by the state which, when properly sold to the interested voters, promise a few more voices; however, in the end no one will be held to the letter of the law.

In the case of free radio this is especially clear. Until now it has been allowed to exist in spite of a specific ban on transmission which has existed since the beginning of radio and television. This condition exists because technical development is far ahead of the legal system and the cumbersome, uncoordinated bureaucracy. In most cases the transmitter cannot be located and thus seized. And as a rule business connections are effected through private strawmen who usually cannot be convicted of a violation so long as they pay the required taxes on the money they have received from a firm or party. At least for the treasury, money does not stink.

9160
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ELECTRIC POWER NET TESTING TRANSMISSION OF COMMUNICATIONS

Stockholm SVENSKA DAGBLADET in Swedish 10 Aug 81 p 9

[Article by Dag Bjerke]

[Text] There is room in our electric wiring for more than ordinary current. Just recently, the Stockholm Energy Authority began to experiment with sending messages back and forth in the power net in the form of weak electrical signals.

The technology makes it unnecessary to install a lot of extra wiring for such things as simple telephone intercom systems, remote control signals to central heating plants, and street lighting.

Even the so-called "social alarm system"--that is, the technical "monitoring" of handicapped and aged persons living alone--can be connected to the ordinary electric power net without extra wiring.

Anyone can send any signal he chooses through his own wiring, provided that he does not interfere with radio communications or the power company's equipment, and provided that the devices attached to the house wiring are approved by the Swedish electrical authorities.

The electrical wiring in a house belongs to the homeowner (unlike telephone wires, which are owned by the National Telecommunications Administration). There are already intercom systems on the market which do not require any connection other than an ordinary electric wire.

Voice signals are sent along with the 220-volt current in a home's electrical wiring and can be picked up and sorted out by an intercom receiving unit.

Different Fuses

According to the manufacturers of such devices, it is not necessary for the intercom sending and receiving units to be on the same circuit in the building's wiring system. Like radio signals, the voice signals can be transferred from one wire to another in the fuse box--without metallic contact. But the signals are weakened.

To prevent chaos due to a swarm of more or less essential voice messages in our electrical system, a committee consisting of representatives of the energy authority and

the National Telecommunications Administration is working on proposed rules for regulating the traffic.

There is little expectation at the Stockholm Energy Authority that any great market will exist for advanced telephone intercom systems with many stations using the electrical wiring. According to Wilhelm Liander of the Stockholm Energy Authority, there will probably be problems, for example, in making good exchanges that can switch the calls correctly.

Wilhelm Liander says: "What it may involve at most is simple systems between the house and garage in a home."

Meter Reading

More interesting from the energy authority's standpoint is the possibility of controlling and measuring consumption in Stockholm's thousands of small central heating plants on premises all around the city. That is the immediate goal of the experiments now underway.

Wilhelm Liander says: "Those plants are most often located down in a basement, where there are no telephone or other communication circuits, but there are always electric wires."

By sending signals through those wires, remote control of the central heating plants in question is possible. If something goes wrong in a heating plant today, for example, it often happens that some customers experience no change in heat, while other poor souls freeze because the heat does not reach as far as their apartments.

In such a situation, the new remote control system would make it possible to reduce the heat equally and fairly among all the subscribers while waiting for the failing power plant to go into operation again.

Another idea is that of letting the signal system keep track of energy consumption in the various central heating plants. Today they must be visited individually once a month.

Remote measurement via the electrical wiring is not only cheaper in itself, but also provides more closely spaced readings and, consequently, almost continuous checking of a building's heating plant.

Today it can happen that the heat meter on a customer's premises gets stuck--a fact that may not be discovered for a month. And then the energy authority must bill the customer for estimated usage--something that often results in irritation.

Remote control and remote measurement of central heating plants would also provide a good means of administering and checking consumption in case of rationing.

Street Lighting

Another use for signals sent through the electrical wiring is already being tested today. In parts of Stockholm's western suburbs, street lights are turned on and off

by signals sent through the power net. There is also thought of experimenting in other parts of the city with remote-controlled dimming of costly and "unnecessary" lighting during certain hours.

For a long time now, the power companies have been using their own big power lines as telephone lines through which they talk to each other at various power plants and transformer stations.

11798
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END

JPRS 79043

23 September 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 183

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

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23 September 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 183

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BRIEFS

USSR, NICARAGUA BROADCASTING AGREEMENT--Cooperation in the field of radio broadcasting between the Soviet Union and Nicaragua is envisaged by an agreement signed in Moscow today. It includes the exchange of radio material on the lives of the peoples of both countries, programs on popular art and musical recordings. The agreement was signed by the chairman of USSR State Committee for Television and Radio Broadcasting, Lapin, and the head of the propaganda department of the Sandinista National Liberation Front, (Frederico Lopez). [LD100414 Moscow Domestic Service in Russian 1300 GMT 9 Sep 81 LD]

JAPAN, UK AGREEMENT--London, Sep 4 KYODO--Japan and Britain agreed Friday to study ways to promote industrial cooperation regarding new communications technologies, such as data communications and facsimile systems. The agreement was reached when Ichiro Yamanouchi, Japanese posts and telecommunications minister, met here with British secretary of state for industry Keith Joseph to exchange views on postal and telecommunications policies of their countries. Yamanouchi and Joseph agreed that the two nations should promote such bilateral cooperation on both government and private levels. The British Government has loosened its controls on private production of all telecommunications terminal equipment except for telephones as from last July. This is expected to lead to stepped-up Japanese exports of communications equipment and investments in the British communications industry, Japanese sources said. It will also contribute to industrial cooperation between communications manufacturers of the two countries, they added. [Text] [OW050815 Tokyo KYODO in English 0208 GMT 5 Sep 81]

USSR-INDIA COMMUNICATIONS LINK--The Soviet section of a tropospheric communications line between the USSR and India has been completed. A receiving and transmitting station has been built on a mountain peak in Tadzhikistan. The line will link India not only with the USSR but also with other European countries. [LD030358 Moscow Domestic Service in Russian 1030 GMT 1 Sep 81 LD]

CSO: 5500/2304

ASEAN NEWS AGENCIES EXPAND NETWORK

BK070918 Hong Kong AFP in English 0832 GMT 7 Sep 81

[Text] Bangkok, 7 Sep (AFP)--Chief executives of the four ASEAN national news agencies began their annual meeting here today with a blast at the existing pattern of world news coverage.

In a keynote speech to the weeklong sesson, the head of Indonesia's ANTARA News Agency, General Augusta Marpaung, said the sub-region of the Association of Southeast Asian Nations (ASEAN) was not "adequately serviced by the media."

The ASEAN states--Thailand, Singapore, Malaysia, Indonesia and the Philippines--had been "reduced to a passive recipient of news and information distributed from a few developed countries," he said.

"The meeting of the ASEAN news agencies, which are linked through a computer port in the Philippines, is to discuss moves to broaden inter-regional cooperation to offset the perceived lopsided news flow.

Taking part as observers are representatives of India's PTI News Agency, with which the ASEAN network is already linked, and South Korea's YONHAP, with which a swap is planned.

The ASEAN news agencies have been working toward the creation of an ASEAN News Network (ANN) to tie together about 22 wire services from Asia and the Pacific.

The project, actively supported by the United Nations Education, Scientific and Cultural Organization (UNESCO), is expected to be launched at a Kuala Lumpur meeting in November of the existing Jakarta-based Organization of ASEAN News Agencies (OANA), which would serve as its nucleus.

The ASEAN news exchange network was launched in June 1980 by the Malaysian agency, BERNAMA, Indonesia's ANTARA and the Philippines News Agency (PNA). The Thai News Agency (TNA) joined last May after the government reduced the price of a special computerized communication tariff.

Attending the annual meeting here were BERNAMA's acting director-general, Yusof Bador; ANTARA's chief, Gen. Marpaung, PNA's managing editor-designate, Alberto Corvera; and Krolkkrai Chiraphaet, director general-designate of TNA.

The tiny island republic of Singapore, the other member of ASEAN, does not have a national news agency.

The meeting was formally opened by Thai deputy premier General Prachuap Suntharangkun, who is concurrently chairman of the board of the mass communications organization of Thailand, parent body of TNA.

CSO: 5500/2304

ASEAN NEWS AGENCIES SIGN SWAP ACCORDS WITH 'PTI,' 'YONHAP'

BK1115Z9 Hong Kong AFP in English 0958 GMT 11 Sep 81

[Text] Bangkok, 11 Sep (AFP)--The four ASEAN national news agencies signed swap agreements with Indian and South Korean agencies today in a move toward the creation of a pan-Asian news exchange network.

At a joint press conference, top executives of the agencies of Thailand, Malaysia, Indonesia and the Philippines hailed the new linkups as a step toward correcting perceived problems in the existing pattern of global reporting.

"What we are trying to do in our own modest way is to improve from an imbalanced to a more balanced (news flow) position," said the head of Indonesia's ANTARA News Agency, August Marpaung, who spoke for his colleagues.

The agreements with the Press Trust of India (PTI) and South Korea's YONHAP News Agency marked the end of the fifth annual meeting of the wire service heads of the Association of Southeast Asian Nations (ASEAN).

The ASEAN agencies, which are tied together through a computer port in the Philippines, said in a joint statement they would encourage editors in their respective countries to boost usage of items carried by the ASEAN exchange.

Launched in June, 1980, the exchange initially brought together ANTARA, Malaysia's BERNAMA and the Philippines News Agency (PNA). The Thai News Agency (TNA) joined last May after the government reduced the price of a special satellite communications tariff.

The joint statement expressed disappointment that their respective governments had so far failed to make any further big cuts in telecommunications tariffs, despite repeated appeals by the news agencies.

Mr. Marpaung noted that rates remained generally higher in developing countries than in the West for 24-hour leased satellite links, making it cheaper to send news into the Third World than for local countries to get it out.

He called for implementation of earlier recommendations that satellite charges, notably the so-called Press Bulletin Service (PBS), be reduced to no more than $200 a month to give regional countries a fighting chance to swap news and information.

The ASEAN agencies, backed by the UN Educational, Scientific and Cultural Organization (UNESCO), is working to set up an Asian News Network (ANN) linking about 22 wire services from Asia and the Pacific.

The project is expected to be launched at a meeting in Kuala Lumpur in November of the existing Jakarta-based Organization of Asian News Agencies (OANA), which would serve as its nucleus.

The ASEAN link with India's PTI, formalized today, actually has been in operation for about 8 months through a satellite hookup from Jakarta. The tie-up with YONHAP, through a satellite to Manila, is to start functioning in about 1 week.

When ANN gets off the ground, it will tie in agencies from the Soviet Union, China, Vietnam, Japan, Iran and others in what Mr. Marpaung called a bid to complement the Western news agencies, not replace them.

The island state of Singapore, the other member of ASEAN, does not have a national news agency.

CSO: 5500/2307

BRIEFS

SRV, LAOS SIGN AGREEMENT--Hanoi VNA September 1--An agreement on postal and telecommunication cooperation for the 1981-1985 period between Vietnam and Laos has been signed in Vientiane. According to the agreement Vietnam will supply Laos with transmission equipment and expertise and will help train Lao technicians. [Text] [OW011751 Hanoi VNA in English 1717 GMT 1 Sep 81]

CSO: 5500/2304

BREAKTHROUGH COMMUNICATIONS MULTIPLEXER DEVELOPED HERE

Canberra THE AUSTRALIAN in English 10 Aug 81 p 14

[Text]

ONE of the latest pieces of advanced electronic equipment to be developed locally is the state-of-the-art communications multiplexer, designed by a member of the Australian Electronics Industry Association (AEIA) on a Federal Government grant.

The equipment represents probably the most significant design and manufacture of statistical multiplexer equipment in Australia.

To date technologically advanced equipment of this nature, which allows streams of data emanating from myriad points to be conveyed down a single transmission line simultaneously, has been largely imported.

According to AEIA chairman, Mr A.T. Deegan, this local development is an important achievement for the electronics industry and highlights the technological know-how and resourcefulness of Australian manufacturers given the financial support to bring projects to completion.

The communications multiplexer was developed over three years with the support of a $150,000 grant from the Federal Government's IR and D Incentives Board.

The multiplexer has been designed to replace up to 10 leased telephone channels with a single link from one site to another at a speed up to 9600BPS.

A monitoring facility in the device polls the various channels and finds suitable space in the transmission line to push data down to the receiving end in the most efficient and economic manner.

Remote data terminals, modems or other asynchronous devices can thus share a single line with increased cost effectiveness and with no hardware or software changes needed to install the link.

"Statistical multiplexers can provide very much higher efficiency than conventional time division multiplexers," said Mr Deegan.

"At a time there is a computerisation and telecommunications explosion taking place in Australia, this is a tremendously worthwhile advance.

"Usually at least double and in some cases more than 8 times the line utilisation could be gained from a statistical multiplexer."

Mr Deegan said the development program had been pursued by the AEIA member because research had shown there was a viable market for an advanced multiplexer product provided it was technically as good as any imported equipment.

"With the assistance of an IR and D grant the product has been developed to a point where we believe it has export potential.

"Successful competition against imports must be developed by Australian manufacturers if they are to survive," Mr Deegan added.

CSO: 5500/7547

BRIEFS

COMPUTERIZED COMMUNICATIONS--A computerised communications system which can transmit the contents of the Encyclopaedia Brittanica in a second will soon link Australia with the world. The system sends information by light through tubes of optic-fibre hundreds of times faster than signals transmitted by telephone lines. The first test transmissions have already started at Sydney University on stage one of a $20,000 system, which will link most buildings on the campus with a central computer by December next year. The next step will be to link the computer with a satellite which will then connect the system to other optic computers throughout the world. The network manager at Sydney University's computing centre, Mr Brian Rowsell, predicted: "It's only a matter of a year or so and we'll also be able to plug in to virtually every overseas university building linked to a computer, via satellite." He said Sydney University's existing low-speed computer communications would be accelerated 100,000 times using the new AWA-designed optic-fibre circuitry. Yesterday's first transmissions, between the computer centre and the engineering building, used a solid-state laser to convert signals from a computer in one building into pulses of light which carried information at thousands of millions of times a second down tiny glass tubes to another terminal. [Text] [Canberra THE AUSTRALIAN in English 29 Jul 81 p 3]

NEW TV STATION--A new commercial television station for the North-West could be operating from Port Hedland by the middle of next year. A director of Calpurnicus Pty Ltd, Mr Mike Lowry, spoke to councillors at last week's meeting of the Port Hedland Shire Council about the proposed new station. Mr Lowry said that the company was preparing a draft proposal for the Minister for Communications, Mr Sinclair, outlining plans for the network. If this was successful, and licence was granted, the company planned to be transmitting by June next year. Initially the network would cover Pilbara coastal towns, including Port Hedland, Roebourne, Wickham, Karratha, and Dampier. Transmission to inland towns would be taken up later. Depending on the success of these operations, the company aimed to eventually transmit as far north as Kununurra. Broadcasting hours would be from 4.15pm to 11.15pm. Mr Lowry told the council that the first step in the project after approval would be to set up a studio in Port Hedland costing about $1.3 million and employing 15 people. A mobile production unit to provide a local news service would be part of the studio equipment. Mr Lowry estimated that the network would serve a viewing audience of between 30,000 and 40,000 people. He said that the company had an agreement with an Eastern States television station, which would provide a wide variety of high-standard programmes for the North-West channel. The council resolved to support the establishment of a commercial station in Port Hedland. [By Steve Wright] [Text] [Perth THE WEST AUSTRALIAN (News of the North) in English 30 Jul 81 p 1]

CSO: 5500/7547

BRIEFS

U.N. TO AID REMOTE SENSING--The United Nations Development Programme (UNDP) has approved a project for continued assistance in the field of applied remote sensing technology for Bangladesh, according to a UNDP source in Dacca, reports BSS. The project will assist the Bangladesh Space Research and Remote Sensing Organisation (SPARRSO) in strengthening its scientific and technological capability. This will be accomplished by developing and executing applied remote sensing research programmes and service tasks which are of economic importance to the country. SPARRSO will also receive assistance in expanding its linkage with foreign institutions involved in remote sensing with emphasis on cooperation with the ESCAP region. Training and provision of scientific equipment will form a substantial part of the project. The project will be implemented over a period of three years. the UNDP inputs will comprise of 14 manmonths of advisory services, 40 manmonths of consultancy services, 600,000 dollars for airphoto coverage 680,000 dollars for training abroad, seminars and tymposium and 284,000 dollars for the purchase of equipment for the organisation. The project will be executed on behalf of the UNDP by the Food and Agricultural Organisation (FAO) of the United Nations. [Text] [Dacca THE BANGLADESH OBSERVER in English 20 Jul 81 p 8]

CSO: 5500/7185

NEW PLANT TO MANUFACTURE RURAL EXCHANGE COMPONENTS

Bombay THE TIMES OF INDIA in English 10 Aug 81 p 6

[Article by S. Dharmarajan]

[Text]

PALGHAT.

IN an emerging industrial complex on a forest clearing, not far from the Malampuzha dam of incredible grandeur on the western ghats in this district, engineers have developed a system that could at least meet in part the colossal telecommunications demands of rural India.

The magnitude of the demands is underlined by the absence of telephone facilities in 96 per cent of the country's 576,000 villages. Even according to the sixth plan projections, with the addition of 20,000 long-distance connections, the number of villages with the facilities will go upto only about 37,880.

'INDIGENOUS INPUT

Still, sample studies have highlighted the high cost-benefit ratio in providing telephones to the rural community. A telephone could save a crop, prevent the hold-up of harvest, help labour and protect a life. Even otherwise, social and administrative considerations point to the urgency for expansion of the rudimentary rural telecommunications coverage.

These invest considerable relevance to the programme of the Palghat factory (at Kanjikode) of the Indian Telephones Industries set up with substantial indigenous input.

The ITI design of a local-cum-transit switching exchange, initially with nine lines, suitable for rural areas, is based on the latest available technology. The equipment will be ready for field evaluation before April next, preparatory for manufacture and sale to the P and T. The Palghat factory of the public undertaking will be exclusively concerned with the manufacture of electronic switching equipment and the government has approved a massive expansion programme for the factory.

The factory in a short period of existence has already completed the first phase to reach its rated capacity of 10,000 lines of electronic exchanges. It will go upto 60,000 lines in the second phase and 200,000 in the final phase, co-terminus with the current plan period.

Apart from rural digital switching exchanges, the expansion programme finalised by the cabinet, envisages the manufacture of digital trunk automatic exchanges, digital private automatic branch exchanges (PABX) as also equipment for defence services.

Fifty per cent of the cost of the Rs. 16-crore programme will be met from the telecom credit advanced by the World Bank for covering the foreign exchange component.

Utilising advanced concepts, as with rural exchanges, ITI Palghat has designed a PABX with a capacity of upto 1,000 lines suitable for large offices, hotels and conference halls, providing facilities such as call transfer, automatic dialling and the like. Already, ITI has received enquiries from a number of potential users other than the P and T.

Simultaneously, the factory engineers have developed a small electronic exchange of 25 to 50 lines for small offices.

Technology for the trunk exchanges would be secured through foreign collaboration, but for the rest it would be entirely indigenous from the R and D division of the ITI.

Technical collaboration for trunk exchanges would suport product engineering of indigenous designs in converting them into stable and reliable products suitable for bulk manufacture.

Global tenders were invited after the government's approval of technical collaboration. Some of the renowned firms in Belgium, Holland and Japan expressed interest and the evaluation of tenders and the capability of the firms are under study. A team of senior officials has been deputed to these countries. It is expected that the collaboration would be finalised before the end of the year and agreements concluded shortly afterwards.

The engineers are hopeful that the project would reach its full capacity by 1985-86. About 50,000 lines of exchanges will be for rural use.

The project when complete will provide jobs to about 1,000 high-skilled operatives and executives.

Already, the spin-off effect of this project using highly sophisticated technology is evident. Only trainees who pass out of industrial training institutes are taken as workmen. There has been a rush for admissions in nearby institutes. It will also require quite a number of qualified electronic engineers.

More important is the scope of ancillaries to manufacture small instruments. The Kerala government has already contacted the ITI to ascertain the kind of units that could be set up in the neighbourhood. In addition to the ITI, another public undertaking, Instrumentation Ltd., has set up a unit at Kanjikode which bids fair to be better known as a major centre of the electronic industry than as a small clearing on the way to Malampuzha.

CSO: 5500/7175

BRIEFS

NEW RADAR DEVELOPMENTS--New Delhi, August 12--Hindustan Aeronautics Ltd. (HAL) has developed sophisticated air route surveillance radar and precision approach radar, which were so far being imported by the department of civil aviation, the air force and the navy. The project was initiated and funded by the department of electronics after extensive discussions with user agencies and on the basis of a specific request by the national radar council. The development of these radars will strengthen indigenous capabilities and save foreign exchange. The air route surveillance radar costs Rs 4 crores in the international market. The precision approach radar costs Rs 1.5 crores. The air route surveillance radar has a range of about 400 km. It will be used for air traffic control to ensure safety in the skies. The precision approach radar is a landing aid for the aircraft in poor visibility conditions. The development project was completed in four years. HAL gave a presentation here today on this development in the presence of Dr P. P. Gupta, chairman of the national radar council and the electronics commission. [Text] [Bombay THE TIMES OF INDIA in English 13 Aug 81 p 7]

CSO: 5500/7180

BRIEFS

PALAPA SATELLITE REPLACED--The director general of the post and telecommunications, Suryadi, said in Bandung that the Palapa A-1 satellite, constructed in 1976 and owned by the Indonesian Government, will cease to function in 1983 and has only a 70-percent capacity at present. He said the Palapa A-1 satellite will be replaced before 1983. According to a plan, a Palapa B-1 satellite will be launched in early February 1982 and a Palapa B-2 around May 1983 at a total cost of $150 million. [Text] [BK051035 Jakarta Domestic Service in Indonesian 2300 GMT 5 Sep 81]

TELECOMMUNICATION PROJECTS--According to an official of the Telecommunications Corporation, 71 mini-earth satellite stations, 16,381 telephone lines and other communications projects are currently under construction throughout the nation. [BK101015 Jakarta Domestic Service in Indonesian 1200 GMT 4 Sep 81 BK]

TRANSMITTERS FOR RADIO--During a stopover in Medan on his way back to Jakarta on 3 September, Information Minister Ali Murtopo said that the government had built a 100-kilowatt transmitter to strengthen the national broadcast of the Radio Republic Indonesia--RRI--while two more were to be constructed soon. To strengthen its international broadcast, RRI would have two 250-kilowatt transmitters built in 1982, he said. [BK061145 Jakarta Domestic Service in Indonesian 1200 GMT 3 Sep 81 BK]

CSO: 5500/2304

SATELLITE LAUNCH FOR 1984 DISCUSSED

OW140451 Hong Kong AFP in English 0200 GMT 14 Sep 81

[Text] Beijing, 14 Sep (AFP)--China will launch an experimental geo-stationary telecommunications satellite in 1983 or 1984, a government spokesman said here today.

Questioned on recent statements in Rome by Chinese experts attending an aeronautical congress there, the spokesman said "The launching will not take place very shortly as was stated, but in 1983 or 1984."

Two experts at the Rome congress said the STW-2 satellite would be put into orbit by a "great March 3" rocket similar to the European "Ariane" rocket.

Specialists said that if the launching succeeded, China would become the third world power--after the United States and Europe--capable of putting a high-performance carrier rocket of this type into orbit.

Between 1970 and 1978 China launched eight satellites. Since then Beijing has cut back on its space program because of its economic austerity policy.

The launching of a ninth satellite for summer 1979 has never been mentioned since. However, in May last year, China successfuliy carried out its first inter-continental ballistic missile (ICBM) tests.

The STW-2 telecommunications satellite should be put into orbit from a launching pad in the northern Gansu Province, and monitored from an observation station at Weinan in the central Shaanxi Province.

According to reports from Rome, the satellite will be placed in orbit at an altitude of 22,121 miles (35,600km).

Specialists said the "great March 3" rocket would be fueled with a liquid hydrogen and oxygen mixture slightly less powerful than the European "Ariane" system. In recent years the Chinese have shown close interest in the "Ariane" rocket.

The Chinese rocket and its satellite, will both be wholly Chinese manufactured.

CSO: 5500/2307

BRIEFS

NEW RADIO-TV INSTALLATION--Dimitur Trifonov, special RABOTNICHESKO DELO correspondent, reports as follows from the Orelyak Mountain peak in Blagoevgrad Okrug: The area of the Orelyak Peak was previously known only for its particular beauty and for the historical significance of the spot where the Pirin area patriot Yane Sandanski was killed. Today a modern radio-television center is going up here and the first experimental program on Bulgarian television will be broadcast from here tonight. "A powerful and high-quality signal will cover the territory of the Blagoevgrad Okrug and part of Smolyan and Pazardhzik okrugs as well," the engineer Ilya Semerdzhiev, the director of the "radio stations and TV" section attached to the Ministry of Communications, explains. He adds: "The construction workers commissioned this project 16 months ahead of schedule. We now have to use the equipment installed here in an efficient manner so as to be able to transmit high-quality radio and television programs from here." The design of this unique equipment was worked out by experts from the Insproekt Experimental Institute attached to the Telekompleks Scientific Research Enterprise. The work was carried out under extremely difficult weather conditions. The tower is 105 meters high and there is antenna equipment attached to it. The construction was carried out by Sofia Building-Assembling Administration and many highly experienced construction workers and technicians participated in this project that was accomplished within a year. [AU041639 Sofia RABOTNICHESKO DELO in Bulgarian 3 Sep 81 p 1]

CSO: 5500/2304

BRIEFS

NEW TELEVISION TRANSMITTER--Tests of a new television transmitter at Sniezne Kotly in Kar-Konosze have been completed. Equipment is working efficiently. It broadcasts the first television program to the territories of the voivodships in southwestern Poland. The quality of the emission is very good. [Text] [LD030524 Warsaw Domestic Television Service in Polish 1430 GMT 1 Sep 81 LD]

CSO: 5500/2304

BRIEFS

SHORTWAVE TRANSMISSION CENTER--Bijeljina, 9 Sep (TANJUG)--Risto Dzunov, member of the LCY Central Committee and of the SWAPY Federal Conference Presidium, Ismail Bajra, federal secretary of information; and Dr Zoravko Pecar, manager of Radio Yugoslavia, today visited the site of Radio Yugoslavia's new shortwave transmission center near Bijeljina. The new center will have four 500-kw transmitters, making it possible for the station's programs to be heard in all parts of the world. The equipment for the center will be supplied by the Swiss-German firm Brown-Boveri. [LD100402 Belgrade TANJUG Domestic Service in Serbo-Croatian 1312 GMT 9 Sep 81 LD]

CSO: 5500/2304

FIELD EXPERIMENTS IN FIBER OPTICS SECTOR TO BEGIN AT END OF 1981

World Standards Reached

Rio de Janeiro JORNAL DO BRASIL in Portuguese 16 Aug 81 p 3

[Article by Joao Rodolfo do Prado: "Brazilian Optical Fibers Attain World Standards"]

[Text] With advanced, simpler technology and with cheap raw materials (which are abundant and of which Brazil has inexhaustible and extremely high-grade reserves), it is possible to make a glass thread which can begin to play a crucial role in telecommunications. This is of special importance to underdeveloped countries where tel phone systems have not yet been completely installed.

In summary, the optical fiber is one of the most modern technologies. In the race for its development, Brazil is in the front rank; a few weeks ago, the TELEBRAS [Brazilian Telecommunications, Inc] laboratory attained international specifications, in accordance with its timetable, so that field experiments can begin at the end of the year with the installation of a link between Jacarepagua and Cidade de Deus in the CETEL [Guanabara State Telephone Company] telephone system.

The development of optical fibers in Brazil was described enthusiastically by engineer Jose Mauro Leal Costa, the 32-year-old PhD, who is in charge of the Optical Fibers Groups, one of the units of the TELEBRAS Research and Development Center in Campinas. So far, 270 million cruzeiros have been spent over a period of 6 years in an effort which today employs over 50 persons. The group is set up in a well-equipped but rather Spartan shop on the outskirts of the city

According to Engineer Jose Mauro, the project's success is a direct result of the decision made by TELEBRAS to invest in optical fibers at the right moment, that is, in 1975, during the First European Optical Fiber Communications Congress. The first fiber for telecommunications was produced by Corning Glass Works (United States) in 1970, followed by a speed up in research during the following years. Today there are two major systems in operation--Buenos Aires and Hongkong --which use Japanese optical fibers.

First of all, TELEBRAS financed a project in the Physics Institute of UNICAMP [Campinas State University] for the development of optical fiber manufacturing technology; out of the six professors, only Jose Mauro was a Brazilian. During the following two years, equipment was purchased, the laboratory was set up,

and technicians were trained. In 1978, the work was divided for greater efficiency and better handling of project characteristics.

The UNICAMP group concentrated on academic activities aimed essentially at personnel training (today, eight students are taking postgraduate training). TELEBRAS established the Optical Fibers Group specifically to take care of the technology, today employing 20 former students of UNICAMP. These activities are complementary and it is admitted in TELEBRAS that basic research having to do with optical fibers will be financed in the future.

The laboratory is now getting ready to produce the 60 kilometers which will be required for the CETEL link which is already using an optical fiber system of NEC Bento Ribeiro and Colegio (the Rio enterprise has announced that it received the system in January 1979, free of charge, with 2 years to decide on purchase, a decision which is still pending).

In telecommunications we use a fiber of the multimodal, gradual-index type (see insert [not included]) which could be transferred to private industry by the end of 1972. But other, simpler products were discovered in the course of the development of this fiber, such as the one of the multimodal, step-by-step index (involving silica, silicon, and fluorpolymer), transferred to industry after approval of samples in laboratories abroad.

These fibers are installed, for example, in monitoring circuit breakers in substations of the Sao Paulo Power and Light Company. An effort was made to equip the systems at Itaipu but the enterprise responsible for assembly, a Swedish outfit, preferred to use foreign fibers. The step-by-step index type fibers were transferred to X-tal, an enterprise in Rio de Janeiro.

The demand for optical fibers by electrical power companies is very great. Here is why: a power plant contains a series of remote-controlled equipment items; since the electromagnetic field is very intense, the wiring of these systems must be heavily armored and this is very expensive. But it so happens that optical fibers, since they are made of glass, are immune to electromagnetism. This eliminates the need for sheathing and results in a ten-fold cost reduction in the wiring.

This property is one of the big advantages of optical fibers, a material which is being used increasingly in passive systems which are exposed to electromagnetic interference, such as in the modern instrument panels of combat aircraft. Since the capacity of light to conduct information is unlimited--within current technological parameters--there is a guaranteed future for this in telephone systems and computers (where machines are on the decline while conventional coaxial cables are on the increase).

In summary, optical fibers are being used in a large number of fields, from medicine to cable TV, via computers (link between units), vehicles, military equipment, and primarily telecommunications. There are even rather prosaic uses to be found in everyday life.

One example is the lighting on the Chevette dashboard where optical fibers carry light to a lamp that illuminates the ventilation system indicators and the cigarette

lighter. Another one is a decorative object: hundreds of wires come out of a metal base (in which a lamp is concealed) and the points of those wires are illuminated and form a kind of fountain.

The fiber developed by TELEBRAS consists of a larger system also including the Laser Project (under development since 1973, with preparations now being made for the creation of a pilot production assembly line, the indium phosphate laser recently developed, another innovation on an international scale) and the Elo 34 Project (equipment which will provide the interface or connection between the telephone system and the optical fiber).

In broad outline, the system works as follows: the telephone signals (digital in pulse form) are transformed from electric signals into light signals through the activation of lasers (they flash 1 billion times per second, in the IR range). The equipment being developed by TELEBRAS can take care of 480 subscribers with 1 pair of fibers. The fact is that the fiber can receive information for hundreds of thousands of subscribers provided we have electronic equipment capable of transmitting and receiving the light signals (this is why it is said that the cables to be installed will have a lifetime of scores of years).

It must be noted that it is not possible to tap an optical fiber because it only permits direct point-to-point communication. The only possibility of interfering in communication would be to cut the cable and the make a patch, which would make the original link useless.

According to Engineer Jose Mauro, the group already has a mastery of the technology involved in the production of the multimodal fiber and will begin research on the monomodal fiber, by which time it will have caught up to the level of the other countries, something which should happen next year. As for technology transfer to private initiative (the Condugel, Condulli, and Brasel enterprises are involved in the project, developing cables for covering the fibers), he noted that everything will depend on the determination of an overall policy for national production.

Revolutionary Fiber Exhibited

Rio de Janeiro O GLOBO in Portuguese 21 Aug 81 p 5

[Text] Sao Paulo (O GLOBO)--A fiber with a diameter a little larger than a human hair, by means of which it is possible to transmit sound waves in a conversation, images from a TV transmitter, and computer data--that is the product which Hiroshi Murata, chief, Furukawa Electric Company Research Center, yesterday presented to a gathering of 150 engineers from the principal Brazilian telecommunications enterprises in the auditorium of TELESP.

The fiber, made with extremely cheap material--quartz--weighs only one-tenth and has a thickness of one-one hundredth of the expensive copper wires in conventional telecommunications systems. It is the result of a research effort launched in 1966 in China and developed in Japan and the United States. Its basic characteristic is represented by the fact that it can be used as a kind of tube in which laser rays can be confined. In Japan NTTPC, the biggest telecommunications company, is already using 3,300 kilometers of this fiber. Last year, Hongkong ordered another 3,000 kilometers from Furukawa.

Hiroshi Murata--considered the top Japanese authority on this type of fiber--came to Brazil in response to an invitation from TELEBRAS. Today, he will speak at the TELEBRAS training center in Campinas and on 24 August he will speak at 1500 in the TELERJ auditorium. The scientist--who, on 14 August, delivered a lecture in the International Scientific Radio Union in Washington--has scheduled other lectures at the National Technology University of Helsinki and at the National University of Denmark after his commitments in Brazil.

Other Applications

The engineers, who yesterday listened to the Japanese scientist, included representatives from EMBRATEL [Brazilian Telecommunications Company], ELECTROBRAS [Brazilian Electric Power Companies, Inc], FURNAS Mills, ELETROPAULO, TELERJ, TELESC of Santa Catarina, TELPA of Pernambuco, TELEGOIAS, TELEMAT of Mato Grosso, and CTBC of Borda do Campo.

In his lecture, which was entitled "Optical Fiber Systems," he showed slides on the equipment necessary for fiber utilization. His interpreter, Engineer Foad Shaikhzadeh, who accompanied him during his stay in Brazil, is in charge of the telephone cable division, Quality Control Department, Furukawa, Brazil. He said that, as an additional advantage, the use of fibers--also produced in Japan, by Toshiba, Mitsubishi, Nippon, Olympus, and others--permits a greater overload of telephone calls. Simultaneously, 5,000 persons can talk via a single pair of fibers. In addition to the use of optical fibers in commercial telecommunications, other uses have been made of optical fibers in Japan, such as in military installations, due to the ease with which they can be put to use, and in medicine, by virtue of the possibility of easily introducing them into the human body and thus neutralizing cancer cells with IR rays.

5058
CSO:5500/2294

BRIEFS

DIRECT DIALING SYSTEM--A few minutes ago Vice President Leon Roldos inaugurated a new direct dialing system between Ecuador and all the countries of Europe and America. [PA130421 Quito Voz de Los Andes in Spanish 1730 GMT 9 Jul 81]

ECUADOR JOINS BANKING NETWORK--At 0830 on 7 September, Ecuador will join the world banking association network for financial telecommunications, through which the Central Bank of Ecuador and 12 other national banks will communicate through computers with more than 800 banks throughout the world. [PA310354 Quito Voz de Los Andes in Spanish 1230 GMT 26 Aug 81]

CSO: 5500/2303

GOVERNMFNT TO EXPAND BROADCASTING FACILITIES

FL081649 Kingston DAILY GLEANER in English 1 Sep 81 pp 1, 12

[Excerpts] Prime Minister Edward Seaga said yesterday that the government has taken a policy decision to maximize development of its broadcasting facilities at the Jamaica Broadcasting Corporation.

In order to do so the government proposes to complete the broadcasting transmission network to cover the island in both radio and television and part of which will involve expansion in the network by the development of regional substations in radio to give more local meaning to the programming, depth and reach of radio in particular regions of the island.

The prime minister was speaking at the opening session of the four-day Caribbean Broadcasting Union's 12th annual meeting at the new Kingston Hotel, Knutsford Boulevard. The conference is being attended by delegates from 20 member broadcasting systems in the English speaking Caribbean, Curacao and Suriname, as well as observers from the Canadian Broadcasting Corporation, the Commonwealth Broadcasting Unit, the International Broadcasting School which is based in London and the Caribbean Institute of Mass Communications.

Cohosts of the conference are Radio Jamaica, Ltd., and the Jamaica Broadcasting Corporation. The conference is examining developments in broadcasting in the Caribbean and closer cooperation in production and distribution of radio and television programs.

Prime Minister Seaga gave the keynote address at the opening session after being introduced by Radio Jamaica's Program Director Winston Ridgard. The vote of thanks was moved by JBC's Acting General Manager Newton James.

Mr Seaga said that the developing world missed the first round of mass communications development, and for the large part were oral societies and were not therefore active in the development of the written word, publishing and mass communications that arose from the written word. The developing world missed the technology that went into video and audio in the development of the film industry.

Vital Functions

Mass communication serves very vital functions, he said listing: Explanation of government policies and programs (public education); development of informed

public opinion vital to the democratic process; transfer of technology through training and wide cultural exposure.

"For these reasons, the government has taken the policy decision to maximize the development of its broadcasting facilities at the Jamaica Broadcasting Corporation," he said.

"To do so, we proposed to complete the broadcasting transmission network to cover the island in both radio and video. A part of this process will be the expansion of the network by the development of regional substations in radio, to give more local meaning to the programming and the depth and reach of radio in particular regions of the island.

"In addition to this, the expansion of video transmission is intended to reach into areas which are now not being covered, in fact not being even covered by radio transmission.

"The second part of this decision is to convert transmission from black and white to color in television. Not to the detriment of reception in black and white, but to the enhancement of color reception.

"And, thirdly, to expand television transmission to two channels at the beginning and more at a later stage. Finally, to use the second channel for public information, public education, cultural programs and sports."

Mr Seaga said that the first channel in television will continue to provide entertainment and on a wider basis through the utilization of programs derived from satellite transmission. This will be further expanded to transmission in hotel rooms for the benefit of visitors. The proceeds from the first channel in advertising and other revenues will go by way of surpluses to pay for activities of the second channel.

Second Channel

"It is the second channel, of course, which is the crux to the development strategy of which I have spoken. For it will attempt to provide opportunities for training both in formal and informal education, beamed to schools, beamed to target audiences, attempting to transmit skills and technology by means of the visual process.

"The second channel will feature documentaries on the Caribbean, on Jamaica and on the wider world for which there is little room to be found in the first channel which is devoted to entertainment opportunities at present and will continue to do so.

"By virtue of expanding cultural programs, to expand the public awareness of cultural activity and the interaction of cultural expression and talent in the creation of these programs, to expand government policies and programs so that the community at large, and not just the urban sectors, will have the benefit of full awareness of public funds."

Mr Seaga said that at the base of the government's strategy is to rely on private initiative and enterprise in the development of programs. He said that it was not intended that the public corporation will itself undertake widescale programs and the development of various types of talent and activity in that area.

CSO: 3025/1029

TELEPHONE NETWORK BEING EXPANDED IN TEHRAN, TOWNSHIPS

Tehran KEYHAN in Persian 3 Sep 81 p 13

[Interview with Managing Director Mohammad Va'ezi of the communications company]

[Text] In an interview with the Central News Unit, Director Va'ezi gave the following explanations about electronic communication centers in Tehran:

Regarding the number of these centers and new centers beginning operation, he stated: "It is our policy that more attention should be given to the townships, especially those that have been without them for a long time. However, there have been 11 telephone centers in Tehran for a long time, but approximately 50 percent or 60 percent of the work on them, especially installation of the instruments, has been completed; and it only remains to put them into operation. After the revolution and the expulsion of the Americans, Iranian speicalists succeeded, by working assiduously night and day, in putting a large number of these instruments into service; and right now the operation of the Hafez Center is ensured with 5,000 telephone numbers and the Tajrish and Zafar centers, each of which has a capacity of 10,000 numbers and have begun extending lines to subscribers in these areas. And the second phase which will begin service in March 1982 includes centers in Gandhi, Kazaneh, 'Abbasi, and Tehran-e Now--each of which will begin operations with a capacity of 10,000 numbers. Of course, a new survey is also necessary to coordinate our policy of further expansion in the townships."

He added: "The trouble encountered right now is the shortage of cable in the country; and in most of the townships where we are installing telephones for subscribers, our work has remained unfinished due to this shortage of cable. And the cables which have been purchased have not been delivered to us on time due to the economic boycott, but they are enroute and with whatever arrives we will give priority to the townships and then continue work in Tehran."

In reply to the question that in addition to Tehran what other areas are now using these facilities, he said that Shahr-e Kord, Sirjan, Borjnurd, Miando'ab and other small towns are at present working at 50 percent capacity; and when the difficulties have been overcome these townships will continue operation at 100 percent capacity.

Regarding the differences of these telephones with the telephones on hand, he said: "The difference is in their method of operation, to the effect that when we pick up

the receiver no sound is heard from it; and another thing is that it take 15 seconds to establish connection. Another difference is that both sides can cut off the connection." He added: "Fortunately, with the sincere cooperation of Iranian experts, this kind of telephone has been connected with outside lines in the townships. Also, attention should be given to the fact that the particular code and number must be dialed immediately, after which there is a 15-second wait." In conclusion he pointed out: "Special services have been considered for these telephones, which we will report on later."

CSO: 5500/5517

NEW TELEPHONE LINES TO BE INSTALLED

Kuwait KUWAIT TIMES in English 21 Aug 81 p 2

[Text] The new telephone exchange to be installed in Ras Salmiyah will provide the area with a total of 20,000 new lines, according to Communications Ministry Engineer Khaled Al Owisher.

Another new exchange to be built in Nwiseeb will provide the area with 600 lines, he said.

The two exchanges will bring the total to 13 with a total capacity of 119,200 lines of which 75,261 are in operation.

In Farwaniah, a total of 6,000 new lines will be installed, said the district's engineer Ali Showaish Al Lamee.

Vast Area

In all, a total of 33,400 new lines will be installed under a contract signed by the Ministry.

Farwaniyah Exchange which covers a vast area is at present operating on 22,000 lines said Al Lamee. "Most of our problems come from the contractors who were very careless in laying the telephone cables," said Al Lamee. Despite their faults fines of only KD 5 for each damaged cable is being levied.

People wanting a telephone, after submitting the application for new connection demanded instant installation, without being aware that the technical procedures take time, Al Lamee said.

Meanwhile, the head of the complaint section at the exchange, Dakhil Abdul Rehman said that nearly 100 complaints were being made daily and each defect took about two to three days to be rectified. If the defect was inside the exchange, he said, it could be repaired within 10 minutes.

The Fahaheel exchange has a capacity of 15,000 lines but only 9,498 lines are in operation with 5,000 lines to be installed.

Fintas has capacity for 5,000 lines but only 2,516 lines are being used.

Al Ahmadi's capacity is for 6,000 lines but only 4,200 lines are in operation. Shuaiba with a capacity of 3,000 lines is running on 1,207. In Soor, only 99 lines out of a possible 600 are being used. Another 1,400 is to be installed. Riggae with capacity for 10,000 lines, is using only 2,842. Wafra is using only 87 of its 600 lines while Mishrif is using only 1,215 of its 10,000 lines.

CSO: 5500/4731

BRIGHT FUTURE SEEN FOR CONTINENT-WIDE BROADCASTS

Libreville L'UNION in French 12 Aug 81 p 4

[Article by AFPS: "Africavision: First Continent-Wide Broadcast"]

[Text] Next 15 August, Gabon will produce the first television broadcast to be carried throughout the continent. This broadcast, "Africavision," which will take place at the 12 March International Conference Hall at 1730 hours, will be relayed by satellite. It involves a variety competition of which the object is to encourage production of high-quality original popular songs, by creating a spirit of emulation among lyricists and composers through international comparison of their works.

This big variety broadcast will be produced by Gabonese Radio and Television (RTG). In this connection, we had a meeting with the director general of RTG, Jacques Adiahenot. According to Mr Adiahenot, the Africavision broadcast will be an opportunity to make a start on the cooperation in radio and television concerns so much desired by information officials in Africa.

It is with the support of the minister of information, and in particular that of the president of the republic -- who encourages anything contributing to human cultural development -- that Gabonese Radio and Television is organizing the first big variety broadcast ever to take place on our continent. Over 26 African artists and groups of international fame will take part in it, including Myriam Makeba, Manu Dibango, Ossibissa, and Pierre-Claver Zeng, to mention only a few.

American Interest in Venture

The broadcast will be directly relayed to all African countries possessing a ground station, as well as by certain European television companies. We note that at the moment an American television network is interested in this unprecedented event. This is an opportunity for our country, which has equipped itself with modern communication and telecommunication infrastructure (Nkoltang satellite antenna), to use it for a transmission. RTG is providing everything that is needed for production of this broadcast. All

the skilled personnel have been called in, but in some jobs recourse will have to be had to foreign technicians who have had thorough experience in this field.

It is therefore more or less certain that after Africavision, other broadcasts of this sort will follow, under the auspices of URTNA (Union of African National Radio and Television Broadcasting Companies), or will be taken over by African radio and television broadcasting companies.

In conclusion, the director general of RTG made a point of stressing the support and assistance given by National Air Gabon Company and the Dialogue Hotel in Libreville, which unhesitatingly sponsored the broadcast. He also made a point of specially thanking, on behalf of RTG, these two companies, which through their involvement are considerably lowering the cost of this operation.

12149
CSO: 5500/5069

BRIEFS

NEW TELEPHONE INSTALLATION--A team of technicians from the post and telecommunications office is in Farim to install a new telephone network. The new telephone plant, which is similar to those installed in the various regional capitals, notably Bafata, Bolama, Catio and Cantchungo, will solve a serious problem affecting the Oio region by facilitating better connections with the country's other regions and with Bissau. [Text] [Bissau NO PINTCHA in Portuguese 26 Aug 81 p 2]

CSO: 5500/5073

MALFUNCTIONING OF TELEPHONE LINES DEPLORED

Maputo NOTICIAS in Portuguese 31 Aug 81 p 2

[Excerpts] The telephone network in the nation's capital is still affected by serious problems. The repercussions of this situation, which affects also inter-provincial and even international communications are known to all.

In general, the main problem in telephone communications is the poor maintenance of the equipment, most of which is quite old.

Deficiencies in the Maputo telephone network can be explained as well by the lack of spare parts or even by the limited technical knowledge of some of the workers.

Thus the constant breakdowns can be the result of fundamental problems or of the lack of repairs in cases of petty damage.

The most telling example of this lack of concern is the fact that cables are down in various telephone booths around the city. Weeks go by and nothing is done. On Avenida N'krumah, telephone cables that have fallen on the ground cover two whole blocks. In such cases, obviously, the malfunctioning of the telephones cannot be explained by fundamental reasons, but is due to indifference and lack of efficiency.

This situation is common in various points of the city. As a result, hundreds of consumers experience difficulties of various kinds.

True, the lack of spare parts prevents good maintenance of the telephone network; nevertheless, certain difficulties have nothing to do with such lack. When telephone cables are left on the ground throughout the city, the situation is not related to the availability of non-availability of spare parts. This lack is often invoked as an excuse for indifference and carelessness.

The efficiency in telephone communications that is demanded in a large city like Maputo is not compatible with certain justifications that are, to say the least, inconsistent. That some consumers experience difficulties because damage to their telephone derives from a problem that supersedes the capability of the sector is some plausible or justifiable. But when the damage comes from the fact that cables are left to sweep the ground and that some (ir)responsible person has not carried out his duties properly, this is both implausible and unjustifiable.

CSO: 5500/5074

BRIEFS

TV STATION CONTRACT--The Kano State Government has initialled a 5.5 million naira contract for the establishment of a television station. The commissioner for home affairs and information, Alhaji Mahmud Othman, said the television station will publicize government activities in the state. [Text] [AB140904 Lagos Domestic Service in English 0600 GMT 14 Sep 81]

CSO: 5500/2307

BRIEFS

ARIANE TELECOMMUNICATIONS LAUNCH DELAYED--Paris, 11 Sep (AFP)--Technical difficulties will delay the fourth launching of the European Ariane rocket from mid-November probably until early December, informed sources said today. Specialists were not yet able to specify the launching date from the space center of Kourou, French Guiana. Several months of problems have already been reported in trying to iron out difficulties with the one-ton maritime telecommunications satellite "Marecs" that Ariane was to launch was to launch into space. The latest delay results from its continued malfunctioning in ground tests, the report said. Reports said there were no problems with the functioning of the rocket itself, which will be shipped to French Guiana as planned at the end of September. Two successful Ariane launches have already been made in December 1979 and on June 19. The fifth Ariane launching, which will involve the European telecommunications satellite "ECS-1," planned for April or May 1982. [Text] [NC112000 Paris AFP in English 1929 GMT 11 Sep 81]

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END

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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 184

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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2 October 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 184

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LAOTIAN SATELLITE STATION DESCRIBED

BK170832 Moscow Radio in Lao to Laos 1130 GMT 16 Sep 81

[Report from Vientiane by an IZVESTIYA correspondent]

[Text] In the past few days, I visited a construction site in the outskirt of Vientiane capital, at which a communications satellite station is being built. This satellite station is very important because it will allow Laos to become more far-sighted. With the (Antech-Sputnik) system, the satellite relay station will greatly facilitate worldwide news communications for Laos as well as telephone, telegraphic and telecommunications links with the outside world. Laos will be able to communicate rapidly with the other socialist countries. The 12 channel station will allow Laos to set up communications with other Southeast Asian nations. Through a more powerful relay station in Moscow, Laos will be able to set up broader contacts with other European countries. Programs transmitted by the Moscow Television Network will be telecast live in Laos through this station, and programs can also be transmitted live from the Vientiane television studio in Moscow. As a member of the (Antech-Sputnik) system, Laos is capable of developing its own television network. A technical school in Vientiane is now training the first group of television technicians, producers, programmers and announcers for this network. A number of Lao students are also undergoing training programs in the Soviet Union to become future radio and television technicians and engineers for this satellite station.

Fifteen young Lao engineers and technicians are now cooperating with their Soviet counterparts in constructing this station. These Soviet specialists have given practical training in television technology to their Lao colleagues. I met with a young Lao technician at the construction site. (Mou Sivo), chief of the Lao technicians, warmly greeted our party and accompanied us on a tour of the construction site. Construction workers at the site pledged that they would try to complete the project soon so that the station will be able to receive messages transmitted from Moscow by 7 November, and that the construction will be completed totally by 2 December this year so as to welcome the sixth anniversary of the LPDR founding and to make the Lao revolutionary day the most memorable occasion. (Mou Sivo) said that: I am very happy to work beside our Soviet friends because their rich experience and knowledge have enabled us to rapidly master our new assignments. (Mou Sivo) is a native of Luang Prabang. He was barely 15 when he joined the Lao revolution to fight for the independence and freedom of his own

fatherland. He was subsequently sent to an engineering school in Vientiane for 4 years, and assigned to various agricultural cooperative construction sites. He is now studying new technology in erecting television antennas which are as high as 108 meters on a mountain top near the satellite relay station. From this antenna field, visitors can enjoy the spectacular panoramic views of Vientiane City and its outskirts as well as the Mekong River below. This antenna field will serve as the television eye for Laos so that the Lao people will be able to see every corner of the world. (Mou Sivo) who was standing beside me looked into the sky with his bright eyes. He must have been seeing several distant countries, his native town of Luang Prabang which he left 8 years ago, and the city of Moscow where he wants very much to continue his studies and which he had seen recently on a television program transmitted directly from that city of Vientiane. Before we bade him farewell, (Mou Sivo) told us that: I will continue to work at this station. I want to become a specialist so that I can erect similar television antennas in every corner of Laos so as to allow the Lao people to see all the things in the world.

We wish him good luck and success in his dream.

CSO: 5500/2312

GOVERNMENT POLICY, LACK OF FUNDS THREATEN COMPUTER INDUSTRY

Canberra THE AUSTRALIAN in English 25 Aug 81 p 28

[Article by Nicholas Rothwell]

[Text] AUSTRALIA is well behind other advanced countries in its computer industry, according to one of the nation's leading computer scientists.

Professor John Bennett of Sydney University's Department of Computer Science has prepared a detailed examination of our computer industry, of trends in corporate and academic research and of Government policy.

He concludes that Australia's position as a developing high technology centre is threatened because of the failure of the financial establishment to provide venture capital for local innovators.

His work forms part of the study of technological change prepared for last week's Information Technology Week sponsored by the Department of Science and Technology and the Australian Computer Society.

In a sweeping overview, Professor Bennett examines the computer industry, which provides jobs for 80,000 people and supports a host of subsidiary service industries, before providing a set of policy recommendations for the future.

He estimates spending on computers is running at more than $1500 million annually, or 1.5 per cent of the national GNP — but even so, "our level of computerisation does not compare well with that of other technologically advanced countries".

Australia ranks at the bottom of the list of all OECD nations when comparisons are made on the basis of the number of computers per head or per dollar of GNP.

Professor Bennett points out computer technology has acted as one of the basic driving forces in boosting industrial growth, and areas of technology such as microprocessors, shared computer networks, and networked databases are likely to continue this trend in the next decade.

"Access to large and up-to-date databases is likely to have considerable impact on the way in which industry goes about problem-solving," he says.

The social effects of the introduction of computers are commonly raised as a reason for delaying the full-scale introduction of new technology, but Professor Bennett shows the percentage of clerical workers — those who would be retrenched if computers were, in fact, putting people out of work — among the unemployed has stayed constant in recent years.

This is put down to a change in the structure of the workforce, as clerical workers take on a more dominant role (at a rate of increase 2 per cent above that of the rest of the workforce) and society's need for information grows.

But Professor Bennett suggests we may be close to the time when the efficiency of the computer counteracts the job opportunities created by the expansion of the information sector.

"The imposition of manpower ceilings on Commonwealth Government departments will certainly accelerate the computerisation process," he says.

NATIONAL POLICY

Computers have had major effects on society as the introductions of word processors and of automated techniques in industry have progressed, but Professor Bennett considers that declining trends in manufacturing employment will continue regardless of automation, because of economic factors.

He quotes figures which show a reduced working week will not result in a great improvement in employment levels, and suggests an expanded service sector of the economy could not provide enough jobs to counter any serious structural changes caused by increased use of computers and automated techniques.

Dr Bennett calls for a different approach to the problem — a concerted national policy to implement technological change, so some technology independence can be achieved on a competitive basis with other western countries, against which Australia has been steadily losing ground.

He points out the efforts of our funding bodies have not been well co-ordinated and their total spending is "miniscule" given the nation's total computer import bill of $400 million annually.

He also argues that:—

● COMMONWEALTH Government preference for local content in high technology goods is often frustrated by transfer pricing, in which the cost of imported items is marked down to give an artificially high level to local content, with the mark-down being transferred to the parent comapny abroad as profit.

● THE offsets program intended to improve Australian industry's high technology skills has been broadened too far, with the result that offset credits can be obtained for too wide a range of products.

"The clearest case for a strong move to encourage Australian innovation and local computer hardware manufacture, at least of selected components and microprocessors, is to compare our import-export ratio for computers with that of other developed countries," he says.

● AUSTRALIAN computer companies have not been able to raise sufficient venture capital to honor their contracts and develop their products without losing financial control of their affairs.

This "financial conservatism" which had forced them to move abroad or to close down was in marked contrast to the heavy backing given computer ventures in other nations.

In Britain, Canada and Japan, the introduction of computers and robots into the private sector had been stimulated by concerted Government policy, involving research and forecasting.

"The Commonwealth and State Governments could well follow a similar policy here. It would ensure new skills are brought to the notice of in-house personnel more readily, and enable savings to be made more readily in times of economic cut-back.

SKILL TRANSFER

"It would also facilitate the transfer of skills acquired on major government contracts to the private sector and vice versa, and be consistent with the philosophy of constraining the growth of the public service," Professor Bennett says.

Failure to make improvements in Australia's computer technology would cause our standards of living to lag behind those of other countries, and while changes would alter the structure of the workforce, confrontations and redundancies were not neccesary developments.

But planning at a national level was essential to help industry automate, monitor the effects of change, provide guidelines and cushion the effects of the switch-over through retraining schemes.

Profesor Bennett also called for a National Computer Centre to be set up to complement the activities of computer consultants, so the small businesses — whose use of new techniques would determine the standing of the nation in the switch to new technologies — could have direct access to the latest information.

CSO: 5500/7548

LOCAL COMPUTER INDUSTRY TOO LATE FOR CHIP MARKET DRIVE

Canberra THE AUSTRALIAN in English 11 Aug 81 p 17

[Article by Michael Pollak]

[Text]

THE local computer industry would be best served by a vigorous pursuit of "niche" markets rather than a government-led attempt to catch up on hardware development.

A stark appraisal of the local industry's future was made last week by Professor Fergus O'Brien, the associate head of computing at the NSW Institute of Technology, who believes "Australia already has missed the boat on chip technology".

Professor O'Brien said even if the Federal Government poured $50 million into developing the chip sector, Australia would remain at least one generation behind the latest techniques in the most advanced nations, the US and Japan.

"This is the kind of money needed to have effectively functioning LSI (large scale integration) systems, which have 50 per cent less cost-performance than systems now available in other industrialised nations," he said.

"LSIs in order of magnitude are a generation behind VLSIs (very large scale integration), which in turn are set to become obsolete with the development of very very large scale integrated circuits.

"The US and Japan are constantly improving their lead over western competitors, and with Australia even further behind there is no hope of our industrial capacity ever becoming a challenge."

Professor O'Brien said he agreed with an assessment last month by the professor of computing at Macquarie University, Professor Jan Hext, that Australia was on the fringe of technological development.

But he challenged Professor Hext's assessment that an influx of public and corporate money into research was the main answer, chiefly because "our marketplace is very small, and everyone has difficulty working out which enterprises we should support".

Professor O'Brien, who worked for 15 years as a software consultant in the UK, said a more fruitful approach would be to stimulate venture capital for "uniquely Australian" projects.

He cited as the ideal situation the experience of Hartley Computers, a company which started by fully importing its hardware, and then wrote all its software to create an innovative accounting system.

"This system was first applied to sophisticated and complex domestic needs, and later exported to cover similar situations overseas," Professor O'Brien said.

"Another example of solving a specific local problem and adapting the solution for overseas needs is the Snowy Mountains hydroelectricity scheme, which provided world-standard technology.

IDENTIFICATION

"The important thing for the computer industry is to

identify problem areas specific to the Australian environment, and then try to find solutions which can be applied within a recognised and viable marketplace."

Professor O'Brien said overseas experience had shown that entrepreneurs in the computing industry faced the same risks and pitfalls as in any other enterprise, with the exception that "in computers, things move fast".

A principal area in which computer entrepreneurs could boost the industry was communications because, according to Professor O'Brien, "Australia is a series of islands with not very good links".

Professor O'Brien, whose British company Scicon had been the first software consultancy in Europe, analysed the present Australian situation thus: "The nation is sparsely populated, with problems of control and transportation which in turn lead to high costs of marketing.

"For example, because three million of Australia's 14 million people live in Sydney, marketing of a product tends to be concentrated in the early stages just in that city.

"Everything seems to be geared against diversification into new areas – different States have different laws, and attitudes of mind often are a hindrance to conquering the tyranny of distance.

"It is here that the niche market concept becomes important, whereby specific problem-solving computer technology can overcome the seemingly insoluble hindrances to many enterprises."

Professor O'Brien said because Australia was a place of such vast distances, technology had to be developed to make communications "independent of distance".

"Because of the high cost of STD calls and the often prohibitive price of interstate jet travel, it is becoming increasingly desirable to replace face-to-face communications with terminal-to-terminal conversation," he said.

"CSR is only one major company which has installed separate computers in each division throughout the country to allow direct communications.

"This move was spurred by the horrendous Telecom bills CSR and like-sized companies have been incurring.

"In this context it must again be stressed that computer developments of this kind are the result of market pressures such as increased costs and the need for rationalisation."

Professor O'Brien, who was brought to Australia in 1976 by the software arm of international group PA Consulting Services, said rationalisation was the key to effective industrial development, a trend exemplified in US communications planning recently.

His local experience includes opening the Canberra office of Facom Australia in 1977 and he was involved in talks for introducing the company's systems within the Australian Bureau of Statistics.

Relating recent overseas developments to the Australian environment, he cited the case of FM radio in America, where unused sections of a radio band were being used by retail stores for digital transmission, for example from a central purchasing department to scattered supermarkets.

Professor O'Brien was quite explicit in enunciating the scope of such activities: "In the US, a company was launched within a year to provide a digital transmission service for retail chains, and its profitability is such that the investment yield for backers such as banks is better than that of groups which had raised money to drill for oil."

CSO: 5500/7548

FRENCH OFFER TECHNOLOGY IN BID FOR SATELLITE CONTRACT

Canberra THE AUSTRALIAN in English 14 Aug 81 p 1

[Article by Jane Ford]

[Text] A FRENCH aerospace company is to transfer a large slice of space technology to a huge research project in Canberra in an attempt to secure the contract for Australia's domestic satellite.

This is seen as the first step in establishing an Australian space industry and could eventually give the country the capability to build its own communications satellites and develop related technology.

The move will also give a big boost to Starlab, a joint project between Canada, the US and Australia to build a space telescope, to be launched aboard America's space shuttle in 1989.

At present Australia's participation in the project is in the balance awaiting a decision on funding in next week's Federal Budget.

The Starlab project alone would have a multi-million-dollar spin-off to the nation's defence, optical, electronic and aerospace industries but coupled with advanced space know-how it could form the basis of a new high-technology industry and lead to the establishment of an Australian space agency.

SA Matra, Europe's leading space company and a partner with British Aerospace in the joint venture company Satcom International, is one of 20 groups which have tendered for the domestic satellite.

In the next few weeks it plans to sign an agreement with the Australian National University guaranteeing to transfer the technology and to collaborate in designing Starlab's instrument package.

The package is the main element in the space telescope. Engineers and scientists from Mt Stromlo and Siding Springs observatories have developed a low light detecting device, known as a large-format photon-counting array, which is central to its development.

The technology transfer from Matra and its collaboration in developing the detector will allow the present ground-based detector system to be upgraded.

A feature of the memorandum of understanding to be signed between Matra and the university is the French company's undertaking to transfer technology to Australian companies so that the Starlab instrument package can be built in this country and the technology used to develop an Australian space and satellite capability.

Matra's move is part of a wider attempt by the company to gain credits under the Department of Industry and Commerce's offsets program, which can be used for future space technology projects in Australia. Later this year the company plans to set up an Australian office to act as a base for its operations.

ENTHUSED

The head of Matra's space instrumentation group, Mr Armand Peraldi, and a space engineer, Mr Claude Gricourt, visited Mt Stromlo in June for talks with the director of the Mt Stromlo and Siding Springs observatories, Professor Don Mathewson.

This week Mt Stromlo's chief electronics engineer, Mr Ted Stapanski, returned from a four-week visit to Matra's Toulouse plant where he has worked with five of the company's space engineers on a preliminary design and development report for Starlab's instrument package.

This is now in the hands of Professor Mathewson.

Much now depends on the Budget decision on Starlab funding. The team has asked for an initial $104,000 this year for the feasibility study and a total of $24 million over the next eight years for the entire project.

CSO: 5500/7548

IMPORT OF TECHNOLOGY SEEN AS THREAT TO NATIONAL SECURITY

Melbourne THE AGE in English 17 Aug 81 p 3

[Text] Australia's increasing dependence on imported technology, especially computers, could threaten national security, according to the Governor-General, Sir Zelman Cowen.

"Australia is rapidly becoming totally dependent on imports for the supply of its information technology. The situation is said to exist where it is either economically or technically essential for some sub-assemblies to be repaired overseas," Sir Zelman said.

This dependence could threaten our security, our industries and welfare if supply is disrupted in the event of an international crisis.

"A Swedish Government report examines some aspects of vulnerability. There is a threat of acts of war: capture the computer centres, says the report, and you capture the society which depends on them".

Supply could also be disrupted by acts of terrorism, and there were natural risks, such as disasters or accidents, Sir Zelman said.

He made his comments in the introduction to a book expected to be published this week, 'Technological change -- impact of information technology 1981'. He said a computerised society such as Australia, heavily dependent on imported technology, could automatically become vulnerable in case of international crises.

"The 1960s and 1970s in Australia saw advanced technology become a major import. This type of import could well become Australia's largest in the decade of the 1980s unless concrete steps are taken very soon," Sir Zelman said.

Australia would soon reach the stage where information technology would become a major tool in the further development and maintenance of our industries.

"As a society becomes increasingly dependent in its public and private operations on computers, those concerns assume increasing importance."

The Australian public service is the latest single user of computers.

Typical uses include statistical processing, revenue collection, and law enforcement functions, while the nation's complex defence supply system is controlled by a large central computer system in Canberra.

The book, to which several other prominent Australians have contributed, is being launched to coincide with the third annual Information Technology Week.

CSO: 5500/7548

EXPERT SAYS CABLE TV IS NOT BEST OPTION FOR AUSTRALIA

Perth THE WEST AUSTRALIAN in English 24 Aug 81 p 16

[Text]

MELBOURNE: One of the world's pioneers of cable television yesterday cautioned Australians against introducing it.

Mr Israel Switzer (52), an international authority who pioneered cable television in Canada, the U.S., Bermuda and Israel, said that it would be obsolete by the end of the 1980s.

A Canadian physicist, he said that Australians, especially in outback and rural areas, would be better served by the domestic satellite planned for 1985.

By 1990, television would have entered another technological era which would open up "user pays" television.

VARIETY

With more advanced receiver stations, Australians would be able to subscribe to a greater variety of programmes than those offered by existing television networks.

Mr Switzer's visit coincides with the Australian Broadcasting Tribunal's inquiry into cable television.

He told a press conference in Melbourne yesterday that Australia did not have enough programme services to make cable television viable.

He said he introduced cabled American television programmes to the Canadian prairies in 1965 because of reception difficulties and introduced the system to the U.S. in the early 1970s.

EXPANSION

He had seen the system widen from a three-channel selection serving a town of 25,000 to a 54-channel franchise feeding cities such as Atlanta, New York and Chicago.

His company was now bidding for a 61-channel capacity, which could be doubled by using dual cables.

Mr Nigel Dick, the managing director of the Victorian Broadcasting Network, told a "law and the media" seminar at the University of NSW during the weekend that cable television had created a "pornographic explosion" in America.

The Federal Government should hold a royal commission before the system was introduced in Australia, he said.

CSO: 5500/7548

BRIEFS

MALTA SATELLITE LINK--Ethnic radio 3EA linked Australia and Malta by satellite for the first time last Sunday. The two-hour broadcast, which took three months to plan, marked the feast of St Gaetan, patron saint of Hamrun, a large town which was celebrating its centenary as a parish. Dr Joe Abela, 3EA's co-ordinator of the Maltese language group, said Melbourne's 86,000 strong Maltese community were addressed by Dr Anton Buttigieg, President of the Republic of Malta and the Acting High Commissioner for Australia, Mr Jeffrey Pretyman. Friends and relatives also exchanged messages. The broadcast, which was relayed via cable to London, then by satellite to Melbourne, was also sent by cable to 2EA, 3EA's sister station in Sydney. It was organised with the co-operation of Xandir Malta, the republic's broadcasting authority, which provided four commentators who reported on the festivities, brass bands, music and marches, from several vantage points. "It was a fantastic experience," Dr Abela said. "We had people ringing us throughout the broadcast to say that they came from Hamrun and that they were enjoying parties and barbecues to join in the celebrations." [Text] [Melbourne THE AGE (GREEN GUIDE) in English 13 Aug 81 p 1]

CSO: 5500/7548

INFORMATION MINISTER: WEST MONOPOLIZES MEDIA

Bombay THE TIMES OF INDIA in English 1 Sep 81 p 15

[Text]

NEW DELHI, August 31 (UNI).

THE Union minister of information and broadcasting, Mr. Vasant Sathe yesterday said the special responsibility of India, as a third world country, to foster co-operation and closer relations with non-aligned countries in the field of information and mass communication.

Addressing a training camp organised by the All India Youth Congress (I) here, Mr. Sathe said that the Western press monopolised international information media and modern communication technology.

Even the news about our neighbours were received through Western news agencies, which, to foster their own needs, concentrated on conflicts, strife and calamities in the region.

Mr. Sathe said the information gap had led to cultural and economic isolation for these countries, which otherwise had centuries old cultural ties.

"Apart from affecting our relations with like-minded countries, the media invasion from the West is eroding even our cultural and social values. We have made efforts to correct this imbalance in the flow of information. The non-aligned news agency pool was created to expand co-operation among third world countries in the field of information and mass communication. The pool, I am glad to say, has come a long way since the idea was first mooted at the Lima conference of non-aligned foreign ministers in January 1975," he added.

The minister said the pool had now grown into an effective co-operative exchange arrangement between the news organisations of more than 70 sovereign countries, spanning Asia, Africa and Latin America.

But despite this progress, Mr. Sathe said, the problem continued to be serious. As recently as in February this year the foreign ministers of the non-aligned countries, who met here, struck a note of warning in their declaration, taking note of "the tendentious media reportage by transnational information agencies and organisations against developing countries and liberation movements," Mr. Sathe pointed out.

They noted that "media of all categories of advanced countries tend to interpret events in and disseminate information on developing and non-aligned countries in a biased and prejudiced manner, which had affected the stability and development of these countries in many respects."

Mr. Sathe said this was a warning which countries like India could afford to "ignore only at our peril."

He said consequent upon the meeting of the inter-governmental council for co-ordination of information among non-aligned countries in Guyana last May, he had already instructed the official media, particularly AIR and Doordarshan, to make greater use of pool copy. He said India had also been playing an active role in international forums and supporting the UNESCO effort for an international information order on the lines of the international economic order.

Mr. Sathe said that without interfering in the affairs of the fourth estate, the government in a developing country like India had several obligations to fulfil in the area of communications if the people's right to knowledge, information and healthy entertainment was to be guaranteed.

He said the government was taking a number of measures to ensure that the freedom for the press did not result in freedom for the big at the cost of the small. The yardstick, he explained, was not personal profit but social gain.

CSO: 5500/7191

COMMUNICATIONS MINISTER SPEAKS IN RAJYA SABHA

Calcutta THE STATESMAN in English 25 Aug 81 p 12

[Text] NEW DELHI, Aug. 24.—The Government gave two assurances in the Rajya Sabha today—the Telephone Department would be able to give a telephone connexion on demand by 1990 in Delhi, and the present waiting list of 77,000 in the Capital would be cleared by September 1984.

The Minister for Communications, Mr C. M. Stephen, told the House during question hour that there were 9,112 applicants on the waiting list for telephones under the "Own Your Telephone" Scheme in the Capital on July 1, 1981. The Delhi Telephones were expected to commission nearly 10,000 new connexions during 1981-82, after the expansion of different exchanges.

The existing waiting list was likely to be cleared by 1983-84, "except in a few pockets". Besides, production of 200,000 additional cross bar connexions and the completion of two electronic telephone exchanges by 1990 would provide for half-a-million connexions.

Global tenders for electronics and digital-type equipment for the new exchanges had been invited and contracts signed. Construction of buildings for them had already started and installations would commence soon.

Mr Stephen hoped that by 1984, the Delhi Telephones Department would have over 30,000 surplus connexions. But the demand was also expected to increase, resulting in a fresh waiting list.

Replying to Mr Rafiq Zakaria (Cong-I), the Minister said that since he took over the Department, the old practice of members of the Telephone Advisory Committee giving telephone connexions on discretion to particular categories of applicants had been discontinued. But a few connexions, whenever sanctioned to such categories, were given by the committee on a secret ballot system. He denied any knowledge of a money racket involved in the sanction of connexions by members of the Telephone Advisory Committee, as alleged by Mr Zakaria.

Even though Mr Stephen gave information in details, the erratic telephone system figured while he was replying. According to Mrs Hamida Habibullah (Cong-I), a "decorative, lovely and prestigious showpiece" was not giving the necessary service at all. Others promptly joined her and complained about the unreliable telephone service.

Mr Piloo Mody (Janata) asked the Chairman " to note" that the Minister was promising "only instruments" and not the service. "The telephone service is better", Mr Stephen said in a firm tone. That was why people were demanding more telephones. Mr B. Satyanarayana Reddy (Lok Dal) disputed the Minister's claim that the telephone service was now "better".

At this stage, the Chairman told Mr Reddy: "In the question hour, you are supposed to elicit information. But you are giving information which is known to the House". Laughter greeted the Chair's observation.

MAIL INTERCEPTION

Earlier, the alleged interception of Opposition members' mail figured when the Minister was replying on the postal racket.

The issue was raised by Mr J. P. Mathur (BJP), who alleged that the police had been "tampering with" their mail, in spite of the reported withdrawal of an order issued by the Posts and Telegraphs authorities.

The Minister said that he would look into the matter if any specific case of interception was brought to his notice. At the same time, he told the House that Section 26 of the Postal Act provided for interception, for which the P & T Department need not give any special orders. Nor could he confirm or deny whether such an order had been withdrawn. He did not give any assurance to Mrs Purabi Mukhopadhyaya (Cong-U), who wanted to know whether the mail of the Opposition members was safe.

There was no clear reply by Mr Stephen when Mr Lalit Mohan Nigam (Lok Dal) pointed out that Section 26 of the Postal Act was valid for the Emergency and asked "whether the Emergency is here". Whatever was being done had the command of law, the Minister said. If the police were entering the post offices under the law, he could not help it, he told Mr J. P. Mathur frankly.

When Mr Mathur persisted with his supplementary, the Chairman said that it was a "loaded question ... It's like asking somebody —have you stopped beating your wife?" The Minister also thought that Mr Mathur's supplementary was "too hypothetical".

CSO: 5500/7186

LAKE WATER QUALITY STUDIED BY REMOTE SENSING

Bombay THE TIMES OF INDIA in English 27 Aug 81 p 12

[Article by Gopal Misra]

[Text]

AHMEDABAD, August 26.

AN ambitious programme of integrating communication, telemetry, computer-based remote monitoring systems for managing the offshore oil production and its distribution is being implemented by the space applications centre and the post and telegraph department with the communication satellite, APPLE.

The programme code named "TITAN" will be fully operative by the end of April next year when the INSAT satellite would be launched from NASA (USA).

TITAN will enable the ONGC to supervise unmanned oil well platforms from the Central Bombay High north platform. It will cover 30 additional platforms in the Bombay High and Bassein offshore oil fields, the Gujarat pipeline project of ONGC and other pipeline projects of the Indian Oil Corporation (IOC).

A large antennae for the on-shore and offshore terminals of the INSAT-based satellite communication link between Bombay High and the shore oil terminal at Uran was being completed. The first phase of TITAN project for the five oil well platforms had already been completed. The second phase of a further 20 oil well platforms would be completed by the end of next year.

According to official sources, it had become necessary to go in for highly sophisticated system due to the growing needs of ONGC. ONGC wanted to fix remote well platforms which did not require either engineers on board to man them or any rotating machinery-based power source, such as diesel generators.

The energy requirements of such platforms was to be met by photovoltaic power sources. A public sector company, Central Electronics Ltd., had developed indigenously photo-voltaic power sources. They would be fitted to platforms from No. 12 onwards.

The TITAN project required the import of some equipment. However, the problem was partly solved by the Electronics Corporation of India Ltd. (ECIL). A number of items were produced in the country, though some of them had to be imported.

It was also found that the requirement of ONGC had many common features with the requirement of the Indian Oil Corporation for tele-supervisory control for the Salaya-Viramgam-Mathura oil pipeline. The electronics department had succeeded in co-ordinating the two requirements. A tie-up was successfully made involving ONGC, IOC and ECIL.

The country would spend over Rs. 50 crores in organising the remote control system necessary for the oil industry. A co-ordination machinery was being set up involving the high officials of ONGC, IOC, post and telegrams, the space scientists and representatives of the electronics department for executing the project.

CSO: 5500/7188

SATELLITE TO AID ONGC MANAGEMENT, COMMUNICATIONS

Bombay THE TIMES OF INDIA in English 27 Aug 81 p 23

[Text] NEW DELHI, August 26.

THE national remote sensing agency (NRSA) has successfully mapped water quality through aerial surveys using remote sensing technology.

The project covered organic enrichment of water hyacinth-infested Hussainsagar lake in Hyderabad and industrial pollution in Godavari river upstream of Rajahmundry town. The investigation covering a period of two-and-a half years was sponsored by the Indian Space Research Organisation (ISRO).

The exploitation of scarce available water resources is frequently accompanied by adverse environmental and socio-economic effects. Adequate and timely environmental information is not available to the pollution prevention and control agencies which hinders the implementation of appropriate conservation and management practices. Remote sensing techniques, using sensors fitted to an aircraft, can facilitate the collection of water quality information over large areas.

Controlled laboratory experiments and boat-level studies involving spectral measurements and simultaneous collection of water samples were conducted first to establish the feasibility of remote sensing of water quality information. Successful results from this phase of the project encouraged NRSA to undertake aerial surveys over two study areas in 1980 and in 1981 using its instrumented aircraft at the time of maximum pollution conditions.

The deteriorating water quality of Husainsagar lake in the heart of Hyderabad city, due to inflow of industrial and other man-made pollutants, was surveyed. Aerial photographs and multispectral digital data from the 11-channel modular multispectral scanner system were obtained and used in conjunction with simultaneously collected water sample data to develop multiple linear regression models on computers.

Computer software programmes were developed to prepare a colour coded map of Husainsagar lake in regard to chloride, chlorophyll, specific conductivity, total suspended and dissolved solids and turbidity. Such water quality maps can help to establish the suitability of water for various uses such as municipal water supply, industry and agriculture.

A similar investigation was conducted over the stretch of the Godavari river above Rajahmundry town where the effluents from the nearby paper mill entered the river system. Aerial surveys helped to generate a colour map of the area to indicate that the paper mill effluent gets diluted and absorbed in the river water before reaching Rajahmundry town.

Such remote sensing surveys will enable the various pollution control agencies in the country to monitor the pollution status of critical areas for taking timely corrective measures.

CSO: 5500/7188

BRIEFS

RURAL TELECOMMUNICATIONS--New Delhi, Aug. 24--The Government is going in for solar and wind power for its telecommunications network in some of the rural areas. Twelve areas have been chosen for providing long-distance public telephones employing multi-access rural radio systems. These are, Nizambad in Andhra Pradesh, Godhra and Mehsana in Gujarat, Bhind in Madhya Pradesh, Dhulia in Maharashtra, Imphal in the north-east, Kathwal in Haryana, Mirzapur, Pauri and Banda in U.P. and Agartala in Tripura. Of these, Godhra, Mehsana, Bhind, Imphal, Banda and gartala do not have any commercial power supply. Hence, the Government has been compelled to try non-conventional sources of power. These areas would have solar generators or a combination of solar and wind generators. [Text] [Calcutta THE STATESMAN in English 25 Aug 81 p 9]

INDO-SOVIET RADIO LINK--Moscow, August 27 (PTI)--A 700-km. radio bridge across the Pamirs is being established, linking theSoviet Union and India, "Pravda" reported yesterday. The receiving and transmitting stations are in Charar-i-Sharif, 23 km. from Srinagar and near Dushanbe, the capital of the republic of Tajikistan. The tropospheric communication line is a joint Indo-Soviet project. The Electronics Corporation of India manufactured two sets of big antennae while the Soviet Union supplied the design and special equipment. Indian specialists also took part in the construction of the station near Dushanbe. This is the shortest radio link between India and the Soviet Union. [Text] [Bombay THE TIMES OF INDIA in English 28 Aug 81 p 13]

AHMEDABAD TELEVISION CENTER--Ahmedabad, August 29--The Ahmedabad centre of Doordarshan, to be set up at Thaltej, will start functioning within three years. This was stated by Mr. Vasant Sathe, Union minister for information and broadcasting, at a press conference here this evening. The foundation-stone for the centre would be laid in October or November. Mr. Sathe, who arrived here yesterday evening, visited the space application centre this evening. He told newsmen that he had discussed the proposal to hold a press conference through APPLE satellite. Journalists from different centres would be invited to discuss different issues with some Central ministers sitting in Delhi. The proposal was quite feasible and would be finalised soon. The Union minister also said that he intended to reach around 40 per cent of the area through the TV network and with colour TV, "I hope", within the next five to six years. At present, only about 15 per cent area was covered. Replying to a question, he said that the government was not thinking at all to start any language news agency. He was thinking of strengthening the news service of All India Radio and the set-up of the Press Information

Bureau. Mr. Sathe said that he did not advocate the press to be committed "in the sense it is taken" except to the good of the people. Replying to another question about the dissidents in the party set-up in the state, the Union minister said that he believed in total discipline and never talked about dissidents. "Even in Maharashtra, I do not intervene in the dissident activities. I firmly believe in the discipline without which the nation could not progress." He added that the discipline should start first from the party. By and large, the party workers were disciplined. [Text] [Bombay THE TIMES OF INDIA in English 30 Aug 81 p 13]

SECOND SATELLITE LAUNCHING--India's second satellite for earth observation Bhaskara II is to be launched from the Soviet Cosmodrome within the next 3 months. This was indicated by director of the Indian satellite project center Prof U. R. Rao. He was speaking at a 1-day seminar on Apple, India's first communication satellite, in Bangalore today. Professor Rao also said that the life span of Apple is now estimated to be between 18 months and 2 years as against the earlier estimate of 1 year. [Text] [BK181315 Delhi Domestic Service in English 1230 GMT 18 Sep 81]

SATELLITES CAPACITY INCREASE--The capacity of India's two Insat communication satellites will be increased by about 12 per cent. This follows an agreement with the International Telecommunications Satellite Organization in Washington. According to the agreement, India will get 1500 2-way speech channels from the two satellites. It will also get an additional TV distribution channel for each satellite. The agreement also covers radio network and disaster warning services which will be provided by the two satellites. This will help larger use of satellites and save several million dollars. Originally, India had agreed to reduce telecommunication capacity of the two satellites to meet Intelsat's interference criteria. The Indian communication satellite is scheduled to be launched into geostationary orbit in April in 1982 and 1983 from Cape Canaveral. [Text] [BK210932 Delhi Domestic Service in English 0830 GMT 21 Sep 81]

CSO: 5500/2312

BRIEFS

LEASING FACSIMILE TRANSMITTERS—Tokyo Sept 16 KYODO—The Nippon Telegraph and Telephone Public Corporation (NTT) Wednesday began leasing facsimile transmitters and receivers to the general public. The "mini facs" can transmit letters and illustrations on a sheet twice as large as a postcard in one and half minutes using regular telephone circuits, NTT said. The monthly charge for a facsimile with both transmitter and receiver is yen 3,700, and that for the receiving apparatus alone, yen 3,200. Installation costs yen 5,000, it said. NTT said 5,000 purchase inquires have also been received for small facsimiles from shops, realtors, cram schools and others. About 1 million facsimiles are expected to be in use by the 1990s, NTT said. The public corporation has laid circuits between Tokyo and Osaka exclusively for facsimile communications and will expand the network nationwide by March 1988. [Text] [OW161635 Tokyo KYODO in English 1130 GMT 16 Sep 31]

CSO: 5500/2312

INTERNATIONAL DIRECT DIALING FACILITY FOR BIG CITY

Karachi DAWN in English 11 Sep 81 p 6

[Text] Faisalabad, Sept 10--The Pakistan Telephone and Telegraph Department has installed telephone exchanges to provide international direct dialling facilities to subscribers of Karachi, Lahore, Rawalpindi, Quetta and Faisalabad.

Disclosing this at a news conference here today, Mr Daud Ahmad Siddiqui, General Manager, Central Telecommunication Region, Lahore, said the international direct dialling facility would be made available to subscribers of these big cities within two or three months.

He said the department would provide 20,000 new telephone connections in the country during the current fiscal year, out of which over 5,000 telephones would be provided in the Central Telecommunications Region. He said that at present three lakh applications were in the waiting lists throughout the country, including 40,000 in CTR.

He said further that in various parts of the Punjab the Telephone Department provided 7,000 new connections to deserving applicants during the last year. Similarly, the department laid 4,300 new lines during the last year, which involved Rs 86 million.

In reply to a question, Mr Daud Siddiqui said the Telephone Department had formulated a new policy to provide telephone facilities in rural areas of the country. He said that under this scheme the CTR installed 11 small telephone exchanges in rural areas of the Punjab and expanded the existing exchanges in 27 villages, with an expenditure of Rs 16 million. The department also operated 26 public call-offices in rural areas with an expenditure of Rs 77 lakh.

He said adequate expansion in the existing telex system in Sialkot, Gujranwala, Multan, Lahore and Faisalabad was also made during 1980.

Earlier, Mr Daud Ahmad Siddiqui inaugurated 1600-line new telephone exchange on Sargodha Road which would feed the consumers of Sargodha Road, Civil Lines, Chibban Road, Hajiabad and Gulistan Colony. He said the department had already sanctioned 100 new telephones in these areas while 1300 new telephones would be sanctioned within two or three months.

Addressing the audience, he said the Telephone Department would construct a multi-storey building outside Chiniot Bazaar, Faisalabad, to house the existing Telegraph and Telephone Revenue Office.

Mr Mahmood Akhtar, Divisional Engineer (Development), and Mr Fazle Bari, DET, Faisalabad, in their speeches said the new telephone exchange on Sargodha Road was completed in June this year at a cost of Rs 16 million, and the department would construct two or three more new exchanges in Faisalabad for the benefit of the subscribers.

CSO: 5500/4591

BRIEFS

COMMUNICATION SATELLITE PROPOSED--The Pakistan Space and Upper Atmosphere Research Commission [SPURCO] proposes the launching of a multipurpose national satellite at an altitude of 35,800 kilometers above the equator. The SPURCO chairman, in an interview with the Radio Pakistan Karachi representative today, said the satellite would meet on an exclusive basis the telecommunication and television needs of Pakistan. He said the satellite will be fabricated abroad with active participation of SPURCO's scientists and engineers and also launched with the assistance of a selected foreign organization. A number of ground stations, which would also include [word indistinct] stations, will be assembled with the large local component under the advice of SPURCO to make available the facilities provided by the satellite. It is also planned to introduce additional capabilities on the satellite to link with radio stations and for performing scientific studies. [Text] [BK190944 Karachi Domestic Service in English 1700 GMT 18 Sep 81]

CSO: 5500/2312

BRIEFS

SHANGHAI TELECOMMUNICATIONS BUILDING--Shanghai, 16 Sep (XINHUA)--Construction of the Shanghai telecommunications building, China's biggest long-distance project, started on 14 September. The project is scheduled to be completed in 1984. The 120-meter-tall building is going up at the southern end of the Shanghai people's square and will cover 1.47 hectares. The main building will cover a total floor space of 42,000 square meters. Telegram, telephone, fascimile and data communications equipment made in China will be installed. [Text] [Beijing XINHUA in English 0819 GMT 16 Sep 81 OW]

CSO: 5500/4005

BRIEFS

HANOI POST OFFICE TELECOMMUNICATION--The Hanoi post and telegraph office has just completed the building of a radio telecommunication station for use between urban and suburban districts. This wireless system helps accelerate all present work load of the Hanoi office. [BK060749 Hanoi Domestic Service in Vietnamese 1100 GMT 1 Sep 81 BK]

CSO: 5500/2312

BRIEFS

NEW RADIO STATION--Telecommunications technicians of the Cuban Institute of Radio and Television are working on the final details for the dedication--on [date indistinct] October--of Radio Sandino in the municipality of Sandino, Pinar Del Rio Province. Radio Sandino, which will be the third radio station in the area, will have a 0.5 kw power and will be audible at Mantua, Guane and Sandino, it will broadcast its own programs 8 hours daily and the rest of the day it will join Radio Pinar Musical Network. Its broadcasts will be primarily directed to young students of three teams stationed in Sandino. Its dedication will mark the 113th anniversary of the beginning of our struggle for independence. The announcement was made during a ceremony held by provincial party and government officials to honor the Pinar Del Rio press workers on the occasion of the international day of the journalist. [Text] [FL091935 Havana Domestic Service in Spanish 1829 GMT 9 Sep 81 FL]

CSC: 5500/2312

BRIEFS

SATELLITE TRANSMISSION PROJECT--Manama, 19 Sep (GNA)--Tariq 'Abd al-Rahman al-Mu'ayyad, Bahraini information minister and chairman of the Gulf News Agency board of directors, today endorsed the agency's satellite network project for transmission to most Arab and world capitals. In a statement on this occasion al-Mu'ayyad said that the Gulf News Agency's responsibilities in communicating the cultural and humanitarian role of the Arab Gulf countries require it to rely on the latest technology in transmitting news. The Gulf News Agency satellite transmission network will include direct lines for transmitting news to most Arab capitals, Europe, Africa and Asia. The network is expected to come into operation within the next 3 months. [Excerpts] [GF191308 Manama Gulf News Agency in Arabic 1115 GMT 19 Sep 81]

CSO: 5500/2312

BRIEFS

'PARS' AGENCY NAME CHANGE--Prime Minister Mahdavi-Kani presided over a cabinet meeting today. At the beginning of the session the Defense Ministry under secretary submitted a report on the situation on the battlefronts. During the session the cabinet changed the name of PARS news agency to the Islamic Republic of Iran News Agency [WAKALAT ANBA' AL-JUMHURIYAH AL-ISLAMIYAH AL-IRANIYAH] in accordance with a proposal from the Ministry of Islamic Guidance and with the cabinet's approval. [Text] [GF151624 Tehran International Service in Arabic 1430 GMT 15 Sep 81]

CSO: 5500/2312

NEW TELEVISION STATION BEGINS BROADCAST

TA131251 Jerusalem Domestic Service in Hebrew 1100 GMT 13 Sep 81

[From the Midday Newsreel]

[Text] Initial color broadcasts transmitted by the Star of Hope Television Station in southern Lebanon were well received in the north of the country at the end of last week. This station will move into full program of broadcasts in the coming days and our correspondent, Hayim Hecht, reports its owners emphasize again that they have no connection with hotelier Hayim Schiff.

[Begin recording] At the end of the week the initial broadcasts of the Star of Hope Television Station owned by U.S. Priest George Otis were transmitted from the broadcasting van located in Haddad's territory not far from the Israeli northern border. The color broadcasts which were received well in the northern settlements included programs for children, Westerners and documentaries on religion. Fully recognizing the sensitivity of the religious issue in Israel, the station personnel have so far refrained from preaching and settled for films on the life of Moses, for example.

The station personnel are currently dealing with putting up additional boosters which will increase the range of their transmissions. At this stage the broadcasts are transmitted with the aid of transmitters in Marun al-Ra's, in the (Nabi 'Awadah) mountain area opposite Misgav 'am.

At the end of the week a light Centurion-type plane called the Wings of Hope [last three words in English] arrived in Israel. The plane will serve the television station for the transfer of films and reports from the center of Israel and, when necessary, will be used for the transfer of wounded people from southern Lebanon to Israel's hospitals. The words--pray for peace--are conspicuous on the plane. The station's owners intend to overhaul an old British landing strip north of Metulla for the use of the plane. The pilot of the Wings of Hope is Jerry (Tubayas). (Tubayas) was one of the pilots of the White House Boeing planes intended for use as a flying command room in case of emergency.

The representatives of George Otis, the station's owner, repeat their denial of any connection to hotelier Hayim Schiff. [end recording]

CSO: 4323/65

BRIEFS

MICROWAVE PROJECT--San'a', 19 Sep (GNA)--Implementation of the microwave project for communications among al-Hudaydah, al-Mukha and Ta'izz--which is being carried out within the framework of the Saudi-YAR Coordination Council--begins on 1 November. 'Abdallah al-Kayusi, director of telecommunications in the YAR, said that the project, which is being implemented in cooperation with the Saudi projects bureau in the YAR, will safeguard an important part of the YAR's internal and external communications. Referring to the regional microwave telecommunications project that will link Saudi Arabia, the YAR, the PDRY, Djibouti and Somalia and will safeguard telephone communications and radio and television transmissions, he said the project was the fruit of consultations between Saudi and YAR officials. Al-Kayusi said that the most appropriate tenders from international companies to implement the regional microwave telecommunications project will be selected. He added that the project will be completed in early 1984. [GF191345 Manama Gulf News Agency in Arabic 1202 GMT 19 Sep 81 GF]

CSO: 5500/2312

BRIEFS

TV IN KANO STATE--The Kano State Government has initialled a 5.5 million naira contract for the establishment of a television station. The commissioner for home affairs and information, Alhaji Mahmud Othman, said the television station will publicize government activities in the state. [Text] [AB140904 Lagos Domestic Service in English 0600 GMT 14 Sep 81]

IMO TELEVISION STATION--The NIGERIAN STANDARD understands that the Imo State Television Station is beginning transmission on 1 October this year. The paper learns the state governor announced that experts are expected in the state capital to install the equipment preparatory for the take-off. [Excerpt] [AB151945 Lagos International Service in English 1630 GMT 15 Sep 81]

CSO: 5500/5077

SWEDEN PRESENTS NEW PLAN FOR NORDSAT

Stockholm DAGENS NYHETER in Swedish 26 Aug 81 p 16

[Article by Per Sjogren: "Swedish Proposal on Nordsat--Three Satellites Will Provide Five Channels"]

[Text] DAGENS NYHETER has learned that Sweden has put forward a new proposal on Nordsat, the Nordic TV satellite. In the proposal, it is suggested that three TV satellites be sent up, with room for three channels at first, and up to five TV channels later on. Furthermore, the possibility of using them for other telecommunications services when they become technically and economically possible is to be kept open.

The proposal was put forward Monday at a meeting in Stockholm of the committee of the Nordic Council of Ministers which has taken on the job of trying to put a proposal together. The committee consists of state secretaries.

The reaction of the other countries at that meeting amounted to taking a wait-and-see attitude. The question is to be discussed on the ministerial level in Copenhagen on 7 September 1981. Where Sweden is concerned, it will be the Ministers of Education, Industry and Communications who will be involved. It is possible that they will be able to come to a decision in late November.

The latest chapter in the long history of Nordsat had its beginning in November 1980. At that time, the Council of Ministers decided to rethink the entire procedure they had been following up until then. They were afraid to come to a decision for or against Nordsat and then have to find out how such a decision could be implemented in a practical way. Instead, the council decided to start with a discussion of the concrete questions and not make a decision for or against the project. A committee of state secretaries got the job of working on the questions.

Not much has happened up to the present. In a quiet way, the Swedish party worked on the outline of a program of action which was put forward on Monday. Other participants were not prepared for the proposal, and that was the reason for the wait-and-see reaction.

The former Nordsat committee's maximum proposal was to the effect that all TV programs in Denmark, Finland, Norway and Sweden should also be broadcast to the neighboring countries. The Faroe Islands, Iceland and Greenland would have more limited collaboration.

With two channels in both Finland and Sweden and one in Denmark and one in Norway, there would be six TV programs simultaneously in each country.

"Electronic Mail" Service

The new outline of an action program contains the following points:

--A general agreement on telecommunications satellites would be signed by the Nordic countries.

--Three telecommunications satellites would be sent up.

--As a beginning, three Nordic TV programs would be broadcast by way of the three satellites. Later on, that would be increased to five programs. The apportionment among the Nordic countries can be discussed.

--The three TV satellites would also be used for other telecommunications services.

--According to the national Swedish space corporation, it may be technically possible and economically profitable to use TV satellites to transmit other data in text and pictures by "electronic mail". That could be of interest to industry and the authorities.

Research in that field is going on in Sweden and other countries, but it is not yet clear whether other fields of application will make use of television.

Swedish industry is clearly interested in a new variant of Nordsat. In that category are enterprises like LM Ericsson, Saab-Scania and Standard Radio. Industry in Norway and Finland is also interested, while interest in Denmark is believed to be less, according to Swedish assessment of the situation.

There is a chance that, at the meeting of ministers in Copenhagen two weeks from now, the committee of state secretaries will find that the Swedish proposal means that we are on the right path. Until then, the other governments have time to settle the matter.

9266
CSO: 5500/2297

NORDIC COUNTRIES DIFFER ON NORDSAT AS DEADLINE NEARS

Stockholm DAGENS NYHETER in Swedish 26 Aug 81 p 16

[Article by Per Sjogren: "Space Available for a Decision on Nordsat is Shrinking"]

[Text] The subject of Nordsat is one of the most thoroughly discussed subjects connected with Nordic cooperation. After some initial hesitation, Norway was for Nordsat. Opinion in Denmark was also chiefly favorable.

In both of those countries, Nordsat in some form would mean that the cost of a second TV channel of their own would be saved. At present, there is only one channel in each of those countries.

Opinion has been undecided in Finland. One reason for that has to do with language. The majority of the people in Finland have difficulty understanding Swedish and even more difficulty understanding Danish and Norwegian. Furthermore, unedited programs from neighboring countries can cause trouble with the Soviet Union. Nordsat would also reach a considerable amount of Soviet territory. On the other hand, Finnish TV by way of Nordsat would give speakers of Finnish in Sweden more to choose from.

In Sweden, the Social Democrats and the Center Party have opposed Nordsat, and so have large portions of the culture-policy "establishment." People in radio and television have said quite plainly that if Nordsat becomes a reality they are afraid that they will get smaller allocations for their own activities.

The committee on Nordsat was set up in 1975. It made the following two proposals:

--A comprehensive exchange of TV programs within the Nordic countries, and particularly between Denmark, Finland, Norway and Sweden. Then, on a more restricted basis, with the Faroes, Iceland and Greenland.

--To do that, three satellites would be required. Two would be sent up and one kept in reserve on the ground. The satellites in space would have a life of 7 years.

Industries in the four countries which are most directly affected were interested in Nordsat. They regarded the project as a chance to get into space technology. A vote of "no" to Nordsat was depicted as a big threat. A Nordic industrial group investigated the project and arrived at the conclusion that Saab should become the chief contractor responsible for the satellites.

Little Space

The cost of a satellite system with the launching of two satellites has been calculated at a billion kronor. Additional expenditures for television licenses would amount to several times 10 kronor a year and a central antenna to receive programs via Nordsat would cost a few thousand kronor. In November 1980, the Nordic ministers refused to arrive at a decision on Nordsat. Instead, they decided to investigate the practical questions connected with it. That reminds one somewhat of a fyke net for eels. It is wide at the beginning so that the eels will swim in, but then it shrinks, and finally it is hard to get out, even for the slipperiest eels. If the ministers take the technical road, they will be in something that resembles the eels' situation when they finally reach the "yes" or "no" point in regard to a new version of Nordsat.

Emergency Solution

When there was no Nordic decision on Nordsat in November 1980, the Swedish government decided on a technical emergency solution.

The national Swedish space corporation got the job of developing a Swedish satellite which has received the name of "Tele-X". It will be used in the following areas:

--Data communication--"electronic mail" service for the transmitting of texts, pictures and maps. In its new version, Nordsat may possibly also perform this function.

--Measurements of wave propagation. These are measurements of how radio waves behave in the atmosphere.

--"Trucksat." This is a system of mobile stations on long-distance trucks and busses which operate outside Sweden. It is a type of car radio with a long range.

--Direct television. This is a possible way of distributing TV programs directly to homes. The "Tele-X" and the new Nordsat are also encountered here.

Thus, Nordsat has continued to exist all the time in a reduced form. Now Nordsat will perhaps grow back to full size again.

9266
CSO: 5500/2297

NORDIC COUNTRIES WEIGH NEW SWEDISH PROPOSAL ON SATELLITE

Nordsat Project Still Haunts Us

Helsinki HELSINGIN SANOMAT in Finnish 2 Sep 81 p 25

[Text] Finland is waiting for more information on Sweden's new proposal.

The joint Nordic radio and television satellite project, Nordsat, which has for some time now been believed to have been dead, has suddenly begun to rattle in its coffin and the matter is once again kindling heated discussion.

Wind has been blown into the sails by the Swedes, who have proposed to the other Nordic countries a consolidation of the original Nordsat and a satellite serving the needs of industry called Tele-X which was designed in Sweden. The project has been referred to as Nordcom or Nordsat II.

Finland Waiting for Details

The Finnish Ministry of Transportation, which together with the Ministry of Education and Trade and Industry Ministry has familiarized itself with the satellite issue, was still waiting for a detailed report from Sweden on Tuesday.

The Ministry of Transportation announced that the Swedes' new overture came as somewhat of a surprise but that it did not want to say anything about the matter until it is carefully gone into.

Officially, Nordcom or Nordsat II will be investigated in Copenhagen at the Council of Ministers conference on 7 September. Finns participating in the conference will be Transportation Minister Veikko Saarto (Communist), Education Ministers Kalevi Kivisto (People's Democrat) and Par Stenback (Swedish People's Party) and Trade and Industry Minister Pirkko Tyolajarvi (Social Democrat).

Realistic Alternative

If it were realized, the original Nordsat project would mean that all the television and radio programs of all the Nordic countries could be seen and heard in each Nordic country as direct transmissions.

The project, which was officially investigated in the early 1970's, has since then been dragging along during every Nordic Council conference and between conferences the matter has been discussed by government ministers as well as and especially by officials.

The communications industry has also been deeply involved as a behind-the-scenes influence and it is suspected that the Swedish electronics industry is the real father of the Swedes' new idea.

In the opinion of Finnish experts, Nordcom or Nordsat II would seem to be a considerably more realistic alternative than Nordsat since, in addition to ordinary citizens, Nordcom would especially serve industry throughout the North.

The basis for the Nordcom project is the Swedes' so-called Tele-X satellite project, which was designed solely to serve the communication needs of industry.

The plan is now to combine television and radio services with the Tele-X system within a framework that is considerably more unassuming than that of the original Nordsat.

At Least Five Channels

Secretary of State Ulf W. Lundin of the Swedish Ministry of Education has publicly assumed that the system would be gradually developed so that Denmark, Sweden, Norway and Finland would during the initial phase get to use at least three channels and — as a new feature — Iceland, Greenland and the Faeroe Islands from two to three channels. In the final form the new satellites would transmit programs via at least five channels.

An essential difference in the new system by comparison with Nordsat would be the fact that, aside from certain exceptions, programs would not be viewed directly; rather they would be chosen in about the same way as they now are within the framework of the "Nordic Vision" program exchange system.

Objections to Direct Transmissions

In addition to the costs incurred by Nordsat, it is precisely the question of whether programs are worth seeing as direct transmissions that has raised more vehement objections.

It is generally feared that above all an oversupply of serial films and other entertainment programs would bury all those good intentions whereby Nordsat would first of all act as a factor that would culturally unify the Nordic countries.

Mixed and Expectant Reception in Sweden

Helsinki HELSINGIN SANOMAT in Finnish 2 Sep 81 p 25

[Article by Erkki Pennanen]

[Text] Stockholm (HS)—The Swedish Government's new curtailed Nordsat alternative has gotten a mixed and expectant initial reception in Sweden. Nordsat's defenders

speak of a rather bad watering down of the original project, whereas its critics claim that their criticisms also apply to the new proposal.

The Social Democrats and most of the Center Party, that is, a parliamentary majority, are against Nordsat. The revised Nordsat model, which originated in the offices of those officials who have been investigating Nordsat, is also an attempt to get these opponents to agree to a compromise which at the same time might be acceptable as well to the other Nordic countries.

The Social Democrats and the Center Party wing that has constantly opposed it have not rushed to reject the proposal outright.

Questionable Cultural Investment

In Sweden Nordsat supporters have also pointed to its questionableness as an investment in a common Nordic cultural policy, aside from the high costs involved.

From the expanding supply of programs viewers would probably choose foreign serial films, time-killers, sports and other programs that do not have much to do with common Nordic culture.

Nordsat critics regard the fact that in the new proposal it is assumed that programs will be preselected, thus weeding out non-Nordic subject matter due to the more limited use of satellite channels, as a definite improvement.

The Social Democrats have been prepared to support a pure television-service satellite, Tele-X, for reasons of industrial policy. Tele-X alone is, however, a considerably cheaper project than the new, curtailed Nordsat.

In the opinion of Nordsat advocates, the new proposal means compromising with the original central principle of a Nordsat, namely, the free viewability of all Nordic country programs. Limiting the number of television channels would lead to a choice of programs controlled by the central management.

In Sweden, however, Nordsat has had to buck such a strong wind that its supporters are ready to agree to any compromise whatsoever in order to keep the entire project from piling up on the rocks.

Tele-X, on which a decision has already been reached and toward which attempts have been made over the past few months to attract the other Nordic countries, would, however, be a solution quite far from the original Nordsat. An exchange of television programs among the Nordic countries via two or three channels would take a back seat to serving industrial policy viewpoints.

Denmark Caught in Crossfire

Despite an originally favorable attitude toward it, Nordsat has recently also been running up against ever more apparent opposition. Most of the members of the Information Policy Committee appointed by the government recently joined those who want to scrap Nordsat.

The growing number of opponents point to the high costs Nordsat would involve. The belief in Nordsat as a factor that would reinforce Nordic solidarity has clearly been shaken, particularly since even before Nordsat EEC-country satellites have been transmitting programs into Danish homes.

A considerable number of Danes can even now watch Swedish television's two channels. In a few years time all of France's, West Germany's and Luxembourg's television programs will be viewable all over Denmark. That is why fewer and fewer people believe that Nordic solidarity can be significantly reinforced with the aid of Nordsat. Instead, other devices are needed.

Only One Channel of Their Own

The Danes so far have only one television channel of their own. They would readily get another one via Nordsat, but most of the members of the Information Policy Committee laid more importance on the construction of a second channel of their own than on Nordsat. This would also permit the development of domestic regional television.

Sweden's new proposal has so far not even been published as a name in Denmark. Since Danish industry is not interested in Sweden's offer of collaboration on Tele-X either, the new proposal probably does not seem to be appealing to it any more than Nordsat does — perhaps the other way round.

Little Notice Paid to Proposal in Norway

Helsinki HELSINGIN SANOMAT in Finnish 2 Sep 81 p 25

[Article by Arne Finborud]

[Text] Oslo—Sweden's proposal for a curtailed Nordsat project was not even noticed in Norway. They do not want to comment on it until it has been investigated in more detailed fashion. This unwillingness to comment on it is also influenced by the election campaign now in progress.

Norway's political parties support the Nordsat project and Norway has constantly brought the subject up at Nordic Council conferences. When Sweden tried to bury the project last year, Norway fought against it.

Last winter in Norway there was lively debate over Nordsat when it was learned that the English television satellite, which is funded through commercials, might aim its telecasts at Norway and that they could be transmitted via cable television.

At that time the representatives of all the parties said that the admittedly expensive Nordsat ought to be realised without resorting to English and continental European commercial satellite telecasts.

Several political parties have felt that the Norwegian Broadcasting Corporation monopoly should be broken, especially as concerns radio. The rightist Conservative Party, which will probably be in a key position when the new government is formed after the elections, has also proposed that the television monopoly be broken and indicated the possibility of resorting to commercial television.

Procurement of its own television satellite, Norsksat, has also been proposed in Norway. This would be under Norwegian control and Norway would itself decide which foreign programs would be included.

In Norway there is only one television channel. There are, however, two radio stations.

For and Against Nordsat

Helsinki HELSINGIN SANOMAT in Finnish 2 Sep 81 p 25

[Text] For almost a decade the big Nordsat battle, which relevantly ended in a victory for opponents of the project, was waged with these weapons:

For:
Cultural unification of the Nordic peoples.
It would be a protective wall against foreign television and radio satellites in the North.
Linguistic minorities (among others Finnish-speaking Swedes and Swedish-speaking Finns) would fall within a better service range.
The communications industry needs orders.
Satellites are coming anyway.
Denmark and Norway would each get a second channel.

Against:
Too expensive.
The Nordic cultural exchange can be promoted more cheaply.
On the contrary, effective service for linguistic minorities might get worse.
An oversupply of entertainment programs could not be prevented.
Its effect on employment would chiefly be felt only in Sweden.

11,466
CSO: 5500/2301

RECENT SUCCESSFUL LAUNCH OF ARIANE ROCKET DISCUSSED

Payload Described

Paris AFP SCIENCES in French 2 Jul 81 pp 14-20

[Text] Kourou--Ariane's payload, or, as the technicians term it, its "LO3 component," included two satellites--Meteosat-2 and APPLE [(Indian) Ariane Passenger Payload Experiment]--and one CAT [Ariane Technological Capsule].

The total weight of these "LO3 passengers," which is 1,635 kg, was made up as follows: CAT, 266 kg; APPLE, 670 kg; and Meteosat-2, 699 kg.

The operational life of these different payloads is: For CAT, 1 hour of technological measurements and 65 hours of supplying trajectory-calculations data; for APPLE, 2 years; and for Meteosat, 3 years (nominal).

CAT's threefold function was to:

--supply measurements on the environment encountered by the Ariane payload during the propelled phase until loss of visibility by its downrange station at Ascension;

--provide assistance in the trajectory calculations, based on VHF interferometry with the Kourou, Pretoria and Wilhelm (FRG) stations, to reconstruct the performance data and characteristics of the transfer orbit;

--initiate ignition commands for the separation of the two satellites.

The Meteosat-2 Satellite

Meteosat-2, which around 18 July should complete its shift that will inject it into its equatorial orbit at 0° longitude, was designed to perform three primary missions:

1) Take image shots every half-hour, in three spectral bands, of the earth's surface and of cloud masses over the European and African continents and part of the Middle East. Resolution is 2.5 km in the optical mode and 5 km in the infrared mode.

It will also gather data on oceanic surface temperatures, wind velocities and directions, water vapor distributions in the upper layers of the troposphere, and radiative diffusivities.

2) Disseminate the images and data produced by the Meteosat system as well as by external means (data-gathering platforms, the American GOES satellite).

3) Collect the data gathered locally by automatic and semiautomatic stations.

Meteosat-2 will handle Europe's contribution to the World Meteorological Watch set up by the OMM [World Meteorological Organization].

Cylindrically shaped, Meteosat-2 measures 3.20 m high, 2.10 m in diameter; its weight at launching was 700 kg including its MAGE [expansion unknown] apogee engine (340 kg).

The satellite is stabilized by rotation at 100 rpm.

Two stations play a fundamental role in the operation of the satellite: The Michelstadt station, near the Darmstadt (FRG) ESOC [European Space Operations Center], and the latter station itself, which performs several functions.

Michelstadt is a data-acquisition, tracking and telemetering station. It is the station that transmits the commands.

Located at Darmstadt is the Operations Control Center, the Data Processing and Referencing Center, and the Meteorological Data Extraction Center.

The PDUS's [Primary Data Using Stations] are equipped with 4-meter-diameter antennas. The SDUS's [Secondary Data Using Stations], of which over 200 are currently in service, receive images in WEFAX format. Antennas 2.5 meters in diameter are adequate for them.

The National Meteorological Service will shortly market the ATMOS radar beacon, which when coupled with a SIGMA-7 station will enable reception of 7 different physical parameters. The system was conceived and developed by the EERM [National Meteorology Studies and Research Facility], which is headed by Mr Adelin Villevielle.

With the market for these beacons expected to be of the order of several hundred by 1990, international competition for it is certain to be quite lively.

PRINCIPAL METEOSAT CONTRACTORS

Spacecraft Company	Spacecraft Remarks
AEROSPATIALE [National Industrial Aerospace Company] (France)	Prime contractor, system integration, tests and cabling studies.
ETCA [Technical Studies and Space Construction Company] (Belgium)	Electric power supply.
MBB [Messerschmitt-Baldow-Blohm] (Germany)	Structure, thermic regulation, solar generator; apogee motor (ABM), ground mechanical equipment.
MSDS [Marconi Space and Defense Systems] (United Kingdom)	Altitude measurement, attitude and orbit control, ground electrical equipment.
Payload	
MATRA [Mechanics, Aviation and Traction Company] (France)	Radiometer.
Selenia (Italy)	Image channel synchronizer, auxiliary power telecommunications for S-band, UHF, VHF antennas.
Siemens (Germany	S-band, UHF repeater.
Ground Equipment	
CIR [Company for Radioelectronics Industry] (Switzerland)	SDUS prototype.
Dornier (Germany)	Data-collection platform prototype.
ICL [International Computers Ltd.] (United Kingdom)	Data-processing center.
Intertechnique (France)	Receiver and demodulator, signal processing (DATTS [Data Acquisition, Tracking, Telemetry System])

[Tabulation continues next page]

Ground Equipment [cont'd]

LCT [sequential programer, equipment supplier] (France)	Data-collecting platform prototype.
MBB (Germany)	Development and integration of Meteosat Control Center; integration of central station.
MSDS (United Kingdom)	Responder for localization of satellite at Kourou.
Plessey (United Kingdom)	Data transmission system between the DATTS station and the Darmstadt data processing center.
SESA [Company for the Study of Automation Systems] (France)	Data processing center software.
Siemens (Germany)	DATTS central data acquisition station antenna.
Societe Lannionaise d'electronique (France)	Integration of the Lannion relay station, PDUS station prototype.

SEP's [European Propellant Company] MAGE Apogee Motor

Fired 16 hours after Ariane's takeoff, the MAGE motor attached to the Meteosat-2 satellite propelled the satellite into its geostationary orbit, completed at an altitude of close to 36,000 km. Three minutes after this firing, and having functioned perfectly for 45 seconds and completed its mission, the motor was jettisoned from the satellite.

The use of this apogee motor constitutes a first for Europe and a brilliant success for the SEP, who has the prime contractorship for this program. This program, in fact, covers the development of more powerful motors, the MAGE IS and MAGE-2, which will be used, respectively, for the MARECS, ECS and TELECOM 1 satellites.

From the industrial standpoint, this program is being developed jointly with the Difesa e Spazio company in Italy and the Man-Neu Technologie company in the FRG.

Utilizing a state of the art technology, the MAGE is the first motor to incorporate a Kevlar-49-wound structure, thermal protection based on EPDM [ethylene-propylene diene monomer] rubber, a solid propellant using a polybutadiene binder, and nozzles strongly composited with Specarb.

The Indian Experimental Telecommunications Satellite APPLE

The forerunner of the Indian telecommunications satellite program, APPLE is the first Indian satellite stabilized about three axes to be placed in geostationary orbit, thanks to an apogee motor developed by the ISRO [Indian Space Research organization] (the Indian CNES [(French) National Center for Space Studies]) as the fourth stage motor of the Indian SLV-3 launcher.

APPLE functioned fully as planned on the satellite's sixth orbit, that is, on the morning of the 22d, and separation operations commenced on schedule, commanded and monitored by the Indian Shar station at Shriharicota.

One of the solar panels did not deploy, but the Indian technicians then succeeded, on 24 June, in stabilizing the satellite in such a manner that the last panel remains constantly facing the sun.

Weighing 380 kg in geostationary orbit, APPLE is to be placed, around mid-July, at a point situated 102° east longitude.

Its operational life is expected to be 2 years and will depend upon its reserve of hydrazine.

Triple Success for AEROSPATIALE

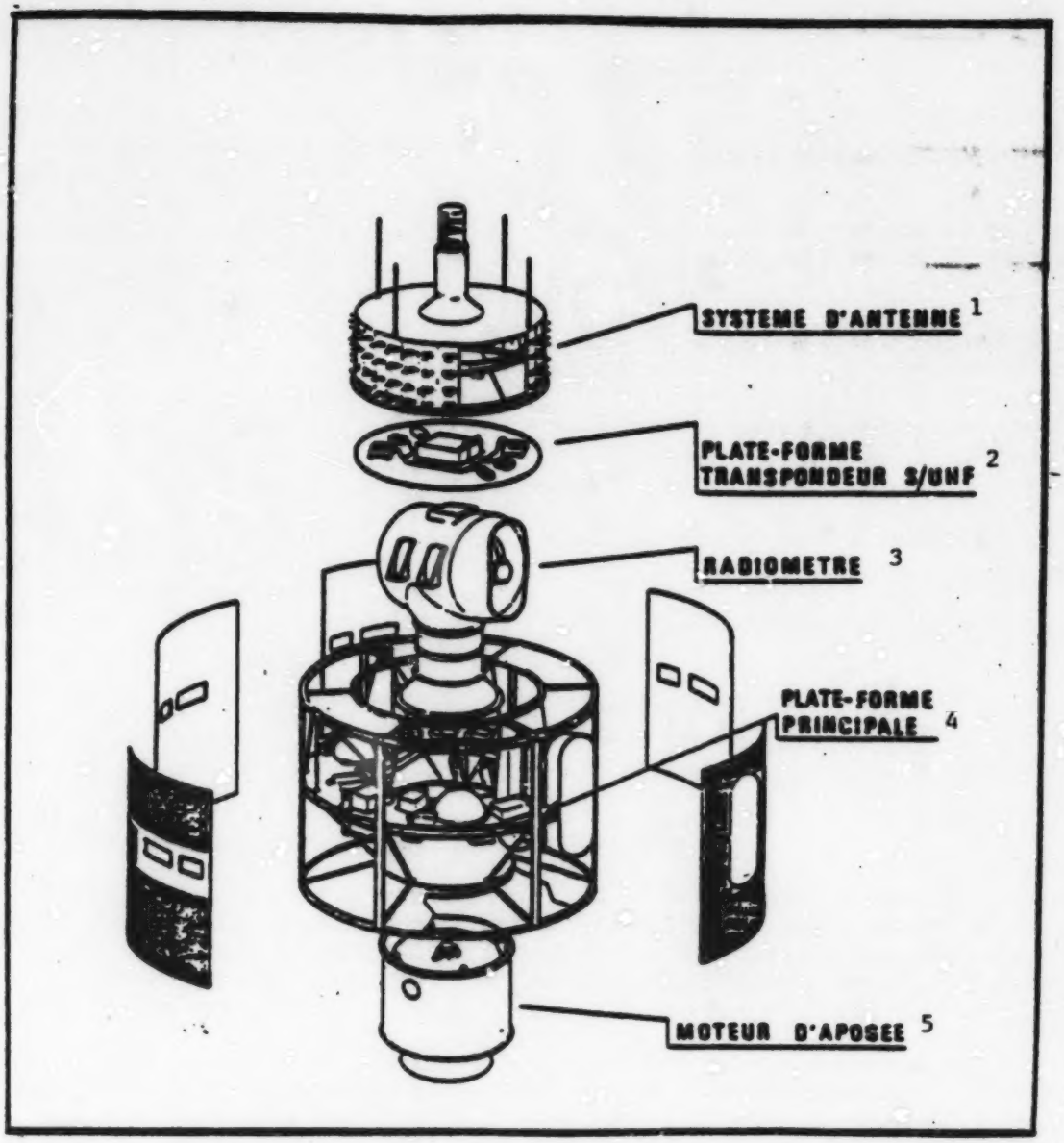
Paris AFP SCIENCES in French 2 Jul 81 pp 21-22

[Text] Paris--The Ariane L-03 launcher brought a triple success to AEROSPATIALE [National Industrial Aerospace Company] as Ariane's industrial architect and stage interfacer, prime contractor for Meteosat, and managing organization and creator of the separation system and of the system for simultaneous injection into orbit of two intermediate-class satellites.

1. Arianne: AEROSPATIALE's mark is visible throughout the spectrum of work done on the Ariane rocket at the company's Mureaux plant and at the Kourou launching center. The role of industrial architect borne by AEROSPATIALE involves the coordination and technical management of the program. Its tasks range from the carrying out of design studies and drawing up of final specifications, to the managing of the development plan, to directing the quality control policy, to conducting the end-to-end testing of the overall launcher. Charged with responsibility for the interfacing of the launcher's three stages, AEROSPATIALE ensures the coherence between the vehicle and the various systems, such as the monitoring system equipment, the operating system equipment and the software.

AEROSPATIALE's functions extend to Kourou, to the rocket's operational phase, in the form of studies specific to each launching, analysis of missions, sequencing of operations, and processing of flight data.

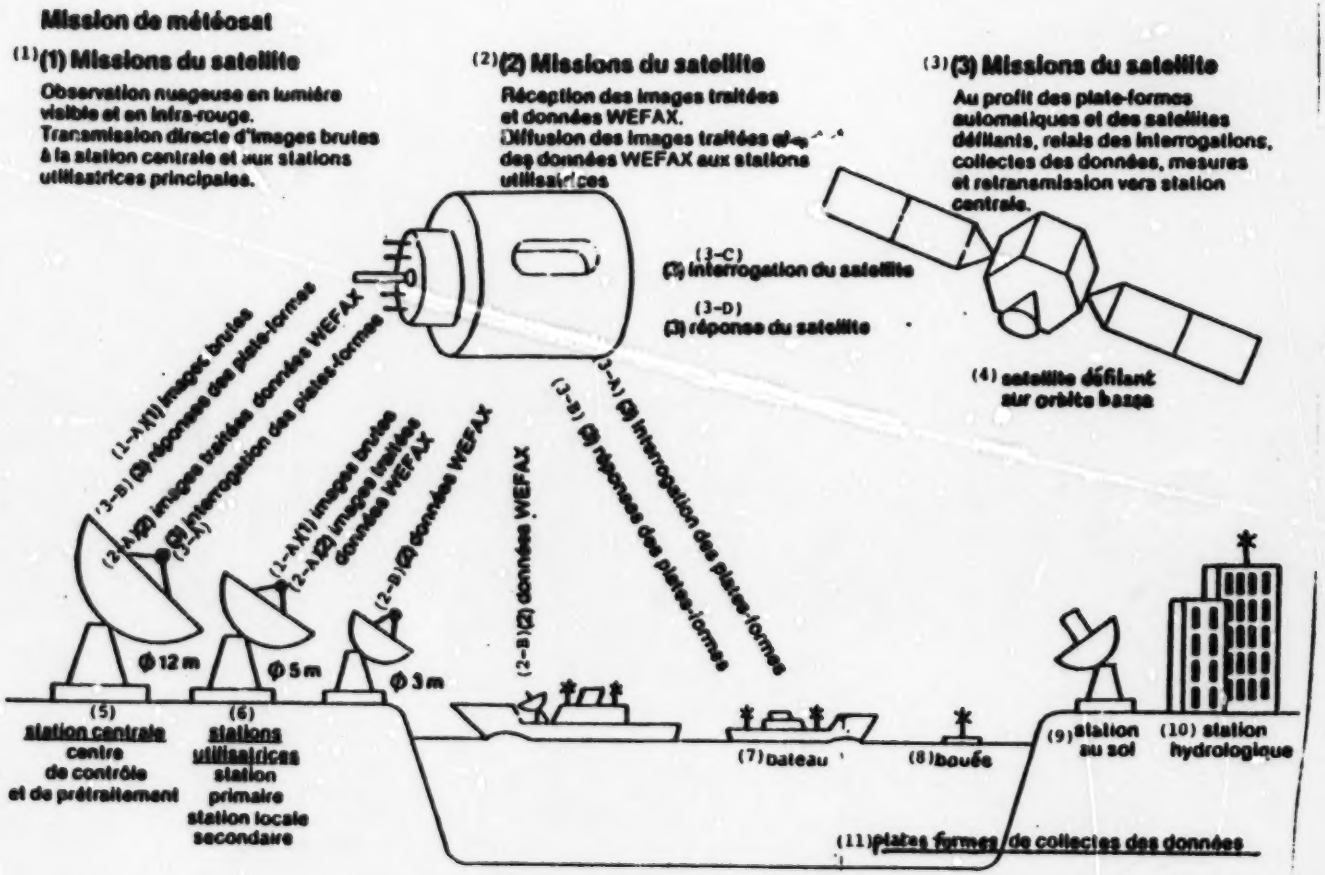
Its role as stage interfacer makes AEROSPATIALE, in effect, the prime contractor of the three stages and of the nose cone, for which this firm specified the architecture and the equipping, and coordinated the development among the European



Meteosat - Cross Section

Key:

1. Antenna system.
2. S and UHF bands transponder platform.
3. Radiometer.
4. Main platform.
5. Apogee motor.


Mission de météosat
(1) Missions du satellite
Observation nuageuse en lumière visible et en infra-rouge.
Transmission directe d'images brutes à la station centrale et aux stations utilisatrices principales.
(2) Missions du satellite
Réception des images traitées et données WEFAX.
Diffusion des images traitées et des données WEFAX aux stations utilisatrices
(3) Missions du satellite
Au profit des plate-formes automatiques et des satellites défilants, relais des interrogations, collectes des données, mesures et retransmission vers station centrale.
(3-C) (3) interrogation du satellite
(3-D) (3) réponse du satellite
(4) satellite défilant sur orbite basse
(1-A)(1) images brutes
(3-B) (3) réponses des plate-formes
(2-A)(2) images traitées données WEFAX
(3-A) (3) interrogation des plate-formes
(2-B)(2) données WEFAX
Φ 12 m
Φ 5 m
Φ 3 m
(5) station centrale centre de contrôle et de prétraitement
(6) stations utilisatrices station primaire station locale secondaire
(7) bateau
(8) bouée
(9) station au sol
(10) station hydrologique
(11) plates formes de collectes des données

Meteosat Mission

[Key on facing page]

Key to Meteosat Missions representation on facing page:

1. Satellite missions:

   Cloud observations in visible and infrared lights:
   Direct transmission of raw images to central station and to principal using stations.

   1-A. Raw images.

2. Satellite missions:

   Reception of processed images and WEFAX data.
   Dissemination of processed images and WEFAX data to using stations.

   2-A. Processed images, WEFAX data.
   2-B. WEFAX data.

3. Satellite missions:

   For automatic platforms and orbiting satellites:
   Relay of interrogations, collection of data, metering and retransmission to central station.

   3-A. Interrogation of platforms.
   3-B. Platform responses.
   3-C. Interrogation of satellite.
   3-D. Satellite response.

4. Orbiting satellite in low orbit.

5. Central station: control and preprocessing center.

6. Using stations: primary station, local secondary station.

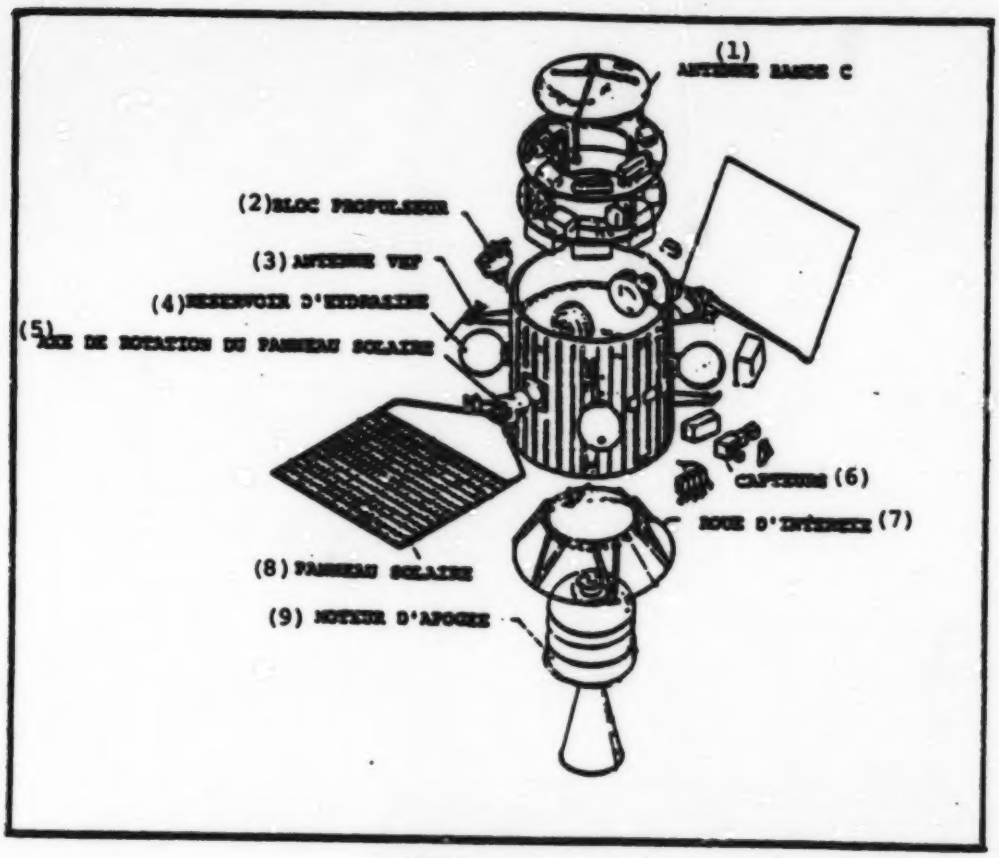
7. Ship.

8. Buoy.

9. Earth station.

10. Hydrologic station.

11. Data-collecting platforms.



APPLE - Cross Section

Key:

1. Band C antenna.
2. Motor module
3. VHF antenna.
4. Hydrazine tank.
5. Solar panel rotation axis.
6. Sensors.
7. Jetevator.
8. Solar panel
9. Apogee motor.

participants in the project. The integration of each of these elements is the responsibility of AEROSPATIALE, with the exception of the second stage, which has been placed under the responsibility of a German industrialist. Aerospatiale also builds the principal elements of the first stage--which is 18 meters high and close to 4 meters in diameter--notably the fuel system and the launcher's array of ignition systems.

2. Meteosat: AEROSPATIALE is the prime contractor for this satellite, which was developed for the ESA [European Space Agency] within the Cosmos consortium framework. In this capacity, AEROSPATIALE provides the complete management of the program, the system design studies, the overall integration, the wiring and the static testing of the satellite.

The satellite's axis was swung into its definitive north-south orientation. The first set of images in the optical and infrared bands will be disseminated this September.

3. Double Launchings: For the L-03 launching, the APPLE [(Indian) Ariane Passenger Payload Experiment] satellite served as a support for Meteosat. The separation system developed by AEROSPATIALE separated Meteosat first. APPLE's separation from the launcher followed.

In future double launchings, the lower satellite will not be able to support the higher one. AEROSPATIALE has therefore designed and developed a standard device--SYLDA [Ariane Double Launch System]--which will standardize this operation, making it very economical to inject intermediate-class satellites (600-800 kg) into orbit. SYLDA will be used for the first time on Ariane No 5 to launch the MARECS [expansion unknown] and SIRIO [expansion unknown] satellites.

MATRA's Role

Paris AFP SCIENCES in French 2 Jul 81 pp 22-23

[Text] Paris--MATRA [Mechanics, Aviation and Traction Company] was chosen by the CNES [National Center for Space Studies] as prime contractor for the design of the Ariane launcher's equipment chamber. This array, located at the top of the third stage, directly supports the satellite payload and contains most of the launcher's electronic and electric equipment units.

The chamber's structure was designed by MATRA to perform two basic functions:

--House the on-board electronic and electrical equipment units;

--Provide the necessary mechanical interface between the third stage and the payload, and between the third stage and the payload fairings.

The different units of electrical and electronic equipment mounted in the chamber are grouped in accordance with the following systems:

--attitude guidance and control,

--sequence,

--zone safety,

--telemetry,

--electric power distribution.

The attitude guidance and control system ensures that the launcher's attitude and trajectory will be the required ones in response to the navigational data received and in accordance with the flight plan.

The functions performed by this system therefore include:

--navigation,

--attitude control of the first stage,

--guidance and control of the second stage,

--guidance and control of attitude of the third stage,

--attitude control of the third stage after motor burnout.

Several firms of the Pechiney Ugine Kuhlmann group took part in the construction of the Ariane European satellite launcher: CEFILAC [Company for the Extrusion of Metals and Joints] Joints Fargere, CEGEDUR [General Company for Duralumin and Copper] Pechiney, FORGEAL [Tool and Die of Light Alloys], Le Magnesium Industriel, Manufacture Metallurgique de Tournus, Microfusion, PCUK [expansion unknown].

Aluminum alloys played a determinant role in this system, since they represent a total weight of 6.5 tons, or one-third the empty weight of the rocket. Besides the lightening resulting from their use, these alloys withstand extreme temperatures, fatigue and corrosion; they are easily forged and welded.

9399
CSO: 5500/2298

PAPER REGRETS DELAY ON NORDSAT DECISION

Helsinki HELSINGIN SANOMAT in Finnish 30 Aug 81 p 2

[Editorial: "Stripped-down Nordsat Model to Be Investigated"]

[Text] After negotiations that have lasted for years now, the Nordic countries have been incapable of reaching a decision on sending a joint television satellite into space. Despite stubborn attempts to bury it, the plan is still alive and the Nordic Council does intend to decide on a possible extension of television cooperation next year in Helsinki.

The Nordsat project has largely been opposed because of the expense. Since a joint decision was not reached, the Swedes recently went their own way by considering the sending of a satellite under Sweden's own power to serve just the needs of their economy. To be sure, opportunities for cooperation have also been offered the other Nordic countries, but so far they have not produced any results.

Against this background it seems quite natural that both projects should now be combined. The Swedes' latest Nordsat proposal includes less television channels than before, but more possibilities for information and news to serve the economy as a new feature. It is apparently easier to market a multifunctional satellite like this to the Nordic countries than one that transmits just television pictures.

While satellite costs can in this way be reduced, the old problems will still be there in the new plan. To some extent they will even be aggravated since limiting the number of channels would obviously force them to choose a program policy. Thus the original idea behind Nordsat would in part be scrapped.

The essential question now is how much a curtailed Nordsat would in practice limit the transmission of programs into a joint network. If the curtailment is considerable, it is hard to see how there would be any culturally and politically decisive advantages in the system in comparison with an ordinary change in programming.

The satellite's other way of providing service, acting as a television information link, may, on the other hand, be worth considering. The need for this can only be disputed by showing that conventional information transmission devices are more advantageous and better-adapted to the situation. Business firms have really demonstrated interest in this kind of service, so the extent of the need for same should be looked into.

The importance of the Nordic satellite project for electronics firms cannot, on the other hand, be underestimated. There is an obvious need for the development of space technology since that field can in future provide many jobs. The question now is whether Nordic companies are capable of maintaining the required level of information and ability. In this sense realization of the Nordsat project would be a noticeable step forward.

11,466
CSO: 5500/2301

FIRM TO PARTICIPATE IN COMMUNICATIONS SATELLITE PROJECT

Oslo NORGES HANDELS OG SJOFARTSTIDENDE in Nowegian 25 Aug 81

[Interveiw with O. Aanensen by Frank Andersen: "Electric Bureau to Participate in Nordic Satellite Project"]

> [Text] The Norwegian firm Electric Bureau is to participate in the telecommunications project Teleeks. The main purpose of the project is to give Northern economics expertise in the use of satellite communications.
>
> As an example may be mentioned banks and bank branches which are to communicate and exchange data rapidly and dependably.
>
> Providing news for newspapers is another example.

The intent is for the rapid communication industry in our part of the world to equal that of other industrialized countries, says Technical Director O. Aanensen of Electric Bureau to NORGES HANDELS OG SJOFARTSTIDENDE.

The project was initiated by Swedish industrial interests, with Saab and L. M. Ericsson in the forefront. "They are strongly engaged in the space sector, as is Electric Bureau (EB). This makes cooperation very interesting. We would like to be included in the so-called definition phase," says Aanensen.

"With our experience in both traditional field and advanced satellite communications we think we have a good foundation. The EB has gone far in the development and sale of small satellite installations for maritime use. Thus far we have sold 130 such small satellite stations for use in ships and ashore. In the cooperation now seeming to be developing we can bring experience and know-how from the ships ashore. Simple and inexpensive satellite terminals and small earth stations may revolutionize a number of communications possibilities. Electric Bureau can enter the field with deliveries of such units to industries in industrialized countries, and we see great opportunities for exports to so-called rural districts, thinly populated areas in the developing countries. These are unique opportunities for Norwegian industry."

[Question] When can such a project be started?

[Answer] The definition phase is imminent, and it is calculated that it can be completed in the early summer of 1982. Among other things, it will include studies of the opportunities in industry, the communications network, the Telecommunications Agency, which would benefit our experts through the development of a satellite system with the mentioned areas of applicability.

[Question] Will you have opportunities in the project itself as well?

[Asnwer] Naturally, we should like to assume so. With our expertise and experience we should have much to contribute to the project, something we should like to demonstrate during the definition phase.

[Question] Discussions are under way among the Nordic countries about joint television transmissions. Is this part of the same effort?

[Answer] At the present time the Nordsat negotiations are at a standstill, and what we are interested in is perhaps something aside from this. Nevertheless, we are interested in putting our experience and knowledge at the disposal of TV transmissions, but this is not an important matter to us. What is important to us is communications opportunities for the economy. However, while participating in the definition phase for Teleeks we should like to work with parallel possibilities, in the sense that we are open to the TV aspect as well.

[Question] You mentioned the authorities in the Teleeks connection. Who will make the decision on Norwegian and EB participation in the project?

[Answer] That decision must be made in the industry and communications ministries, for it is a matter of industrial policy decisions. We in EB are ready to go along, and have informed the industry ministry to that effect. In any case, we hope that the decision on Norwegian participation in the Nordic project will be made some time in September.

11,256
CSO: 5500/2300

BRIEFS

TEXT TELEVISION TO START--The NRK will some time next year start test broadcasting of text television, said Church and Education Minister Forde in Trondheim yesterday. Einar Forde said that new technical equipment to be put to use by NRK will involve significantly better television for the deaf and hard of hearing. About 400,000 Norwegians are included in this category. The new system to be put to use by NRK allows viewers themselves to decide whether they wish programs texted. Relatively little additional equipment is required for taking advantage of the offer. [Text] [Oslo AFTENPOSTEN in Norwegian 31 Aug 81 p 7] 11,256

CSO: 5500/2300

END

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26 October 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 186

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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26 October 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 186

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OPERATIONS OF BANGLADESH OVERSEAS RADIO REPORTED

Dacca THE BANGLADESH TIMES in English 11 Sep 81 p 5

[Text] "This is the Overseas Service of Radio Bangladesh." These are the words that go through the ethereal waves nine times every day, in the broad dialect of six vastly different languages, to the ears of innumerable listeners in far away countries and continents.

Upholding the prestige of Bangladesh the ambassador on ether is the perfect liaison in introducing the world to the country's art and literature, socio-economic development and future prospects. And in presenting programmes on poetry, discussions, documentaries, magazines, news reels, press reviews, news and commentaries, it seeks ceaselessly to strengthen the existing bonds of friendship between Bangladesh and all peace loving nations.

Starting off initially with the aim of transmitting for India, Pakistan and Nepal, the Overseas Service expanded to include in its range the six languages that continue today: Bengali, English, Arabic, Hindi, Nepalese and Urdu.

Interviews, discussions, documentaries and talks on holy places are part of the programme contents which has a strong emphasis on the history of Bangladesh, her culture, tradition, arts and crafts, dances, the scenic beauty and the places of historical and tourist interest, and the music of Bangladesh.

There is regular broadcast of Bangladeshi music especially the traditional folk songs, coming from different regions of the country. Lalan songs, songs of Hasan Raza and Sitalong Shah are also broadcast along with narration and lyric synopsis. The success of this method of presentation is evident judging from the numerous letters that come in praising our music. Eminent artists also render Ghazals, Hamd and Naat and even Nepalese songs are recorded and broadcast.

Notable among such letters are ones sent by: Velt Marti Anttilla of Haparvest, Finland, Thomas Sasenson of Vaxallo, Sweden, Miss H.B. Attar Khan from Mauritius and Miss Sambhab of New Delhi, who all had high praise for "local music of this country." These are only a few of the many listeners who send in numerous letters each day.

In interviews, the lives and contributions of famous people from different countries are presented, be they artists, literateurs, poets, musicians, educationist, etc, while industry, economy, life style, tourism, science and technology are the main subjects of talk programmes.

During a discussion Mr Samarjit Roy Chowdhury informed that Bangladeshi artists were now holding exhibitions abroad, winning international prizes, and are bringing back great honour for the nation. Mr Chowdhury, a professor in Fine Arts, at the College of Arts and Crafts in Dacca, was of the opinion that people abroad could be better acquainted with the painting of local painters, if the Overseas Service projects both the established and the upcoming painters. He suggested a wide coverage of national exhibitions saying it would encourage and attract tourists.

Bengali folklore is world famous. Programme with folk-lore bias are broadcast in each service.

Not only folk-lore, dramas are also broadcast. Based on our life style these dramas highlight the hopes and aspirations and the tradition upon which lives of this country's people is built. A few of the country's literateurs of bygone days wrote noteworthy literature in English, Urdu and Arabic. The wind mills of time have cast these unparalleled literary works into oblivion, but even then they are searched out and collected from the Asiatic Society, the old and even personal libraries with the object of broadcasting them to different target areas. Annual and special festivals are highlighted by special programmes.

National days of Bangladesh get top coverage but at the same time special coverage is ensured to observe the national days of different countries through attractive programmes. The visit of a foreign head of state usually results in special programmes discussing bilateral relations, talking about the natural beauty of that country, her industry, her culture and the way of life of her people and other attractive features. Similarly when the Bangladeshi head of state visits another country, talks, discussions and commentaries are broadcast dwelling on the existing fraternal relations between the two countries, bilateral exchanges and assistance etc. Apart from this special programmes on the music of that country is also put on the air.

Listeners Letter Box is one of the most attractive and popular programmes in the Overseas Service. Listeners from well outside the targeted broadcasting areas send in questions. Apart from listeners from the target areas, letters come from Australia, America, Japan, Nigeria, New Zealand, Czechoslovakia, etc, and the authorities reply to each letter by mail.

Many listeners are members of DX clubs, which publish mostly monthly and even weekly bulletins many of which contain the frequency and turning of the Overseas Service, listed. This is also a regular feature in foreign magazines, under the column concerning Radio. The famous German weekly Bante wave also published the frequency and timings of the English Service. Exchanges of letters have resulted in greater publicity of the Overseas Service of foreign countries.

Al Hajj Moulana Aminul Islam, the Imam Khatib of Lalbagh Shahi Mosque and also an eminent Islamic thinker, during an interview, said that in a recent visit to the Middle-East he had observed, that the people of those countries were eager to know more about Bangladesh. In his opinion the transmission directed to that area was not adequate enough. He was of the view that the duration of the programme should be increased and there should be more items on various other

items. The Overseas Services, he went on to say, can act as an active and powerful ambassador to all countries and peoples.

Dr Mathura Kesi, a student at the Post Graduate Hospital of Medicine and Research has long been associated with the Nepalese programme in the Overseas Service. He says that the Nepalese programme, specially the musical part, is very popular in Nepal. Asked why Bangladeshi music is so popular with the Nepalese, he said that there was a great similarity in the folk music of the two countries. Dr Kesi remarked." During a programme, I never feel that I'm doing the programme in a foreign land. I feel as if I am in my own native land."

Better known as a song composer and lyricist Dr Abu Hena Mustafa Kaamal, a professor of Bangali at Dacca University had this to say about the Overseas Service:

"They are doing well but this is not enough for foreign listeners. But at the same time more and better programmes, means more people involved and this is something they probably do not have. There should also be more emphasis on culture."

A member on the advisory committee of Dacca station of Radio Bangladesh, Dr Mustafa Nurul Islam, a professor of Bengali of Jahangir Nagar University, near Dacca, said, "The authorities work sincerely and do more than enough. In fact they really give a lot of thought towards improving the service."

Mrs Ioni Sanderson, former Secretary of the Imperial Relations Trust, London, who visited the Overseas Service on a recent trip to Bangladesh, in an interview said, "The programmes of the Overseas Service have fascinated me. The service is devotedly presenting the image of Bangladesh to foreign listeners."

The ambassador on either radiates everyday trying to bring the entire world into the bonds of fraternity. And it is our belief, that the bonds of cordiality, goodwill and love, that have grown with the people abroad, will be further strengthened in the days to come.

CSO: 5500/7002

BRIEFS

REMOTE SENSING TECHNOLOGY--A meeting of the Space Research and Remote Sensing Organisation (SPARRSO), was held at "Mahakash Biggan Bha van" in Dacca on Thursday to discuss the application of remote sensing technology to the resource survey of Bangladesh, reports BSS. State Minister for Science and Technology Dr R. A. Ghani State Minister for Water Resources, Power and Flood Control Mr L. K. Siddiqui, State Minister for Public Works Mr Jamiruddin Sircar, Dr Anwar Hossain, Secretary, Science and Technology Divison and Mr A Rahim, Chief Engineer, PWD, among others, addressed the meeting. Speakers at the meeting observed that the SPARRSO was involved in formulating the national space policy and conducting research on space science. It was also disclosed in the meeting that the government had recently signed separate agreements with SEP (France) NASA (USA), for installing ground receiving stations for landsat spot which, among others, would enable the country to be a seat of regional remote sensing centre for South East Asia. [Text] [Dacca THE BANGLADESH OBSERVER in English 5 Sep 81 p 3]

TELEPHONE LINK WITH FRANKFURT--Direct Telephone link between Dacca and Frankfurt, in operation since June 23 has been formally opened, the Bangladesh T and T Board announced in Dacca on Saturday reports BSS. A new telephone circuit between Dacca and Jeddah was opened on August 28. The T and T Board also announced the opening of a direct telephone circuit linking Khulna and London. Khulna became the fourth Bangladesh city after Dacca, Chittagong and Sylhet to have a direct international telephone facility. [Text] [Dacca THE BANGLADESH TIMES in English 7 Sep 81 p 3]

CSO: 5500/7001

DETAILS ON BHASKARA-II LIFTOFF PLANS GIVEN

New Delhi PATRIOT in English 19 Sep 81 p 4

[Text]

BANGALORE, Sept 18 (PTI — India's second satellite for earth observation, Bhaskara-Two, will hopefully be launched in November from a Soviet cosmodrome, Prof U R Rao, Director of the ISRO Satellite Centre, said today.

In his keynote address to a seminar here on "APPLE-India's First Communication Satellite", organised jointly by the Indian Institute of Science and ISRO, Prof Rao said the flight model of Bhaskara-Two was ready and qualification tests were now being conducted.

A Soviet team would arrive here either at the end of this month or early October to conduct joint tests and readiness review. The spacecraft would then be shipped to the Soviet cosmodrome for the launching.

Bhaskara-Two is a successor to the first Indian earth observation satellite, Bhaskara, launched on 7 June, 1979 from a Soviet cosmodrome. Though its life was estimated at one year earlier, it functioned for more than 18 months.

Bhaskara-Two would carry a two-band TV camera system for visible and near infra-red imaging and three frequency radio meters operating at 19, 22 and 31 GHZ frequencies.

All the ground supporting systems, including mission control at Hasan, as well as ground stations at Sheer, Ahmedabad and Bears Lake in Moscow are being readied for the in-orbit operations of Bhaskara-Two, designed and developed by ISRO.

APPLE LIFE SPAN

Dr Rao said the life span of APPLE, country's first experimental communication satellite will be 18 months, Prof Rao said.

He said depending upon the fuel availability and north-south station keeping, the satellite might even be available for operation for a period of two years. The APPLE was originally expected to serve for an year.

Prof Rao said the spacecraft was now in its right position and was being well controlled to suit international regulations.

He reiterated that the non-deployment of one of the two solar panels would not affect the mission of APPLE.

Referring to the criticism in certain quarters that the spacecraft was allowed to drift too long, Prof Rao said that the drifting manoeuvres were normal to take the satellite to its assigned slot of 102 east longitude. "It is incorrect to say that we could not hold the satellite"

CSO: 5500/7005

TATA INSTITUTE PRODUCES MOBILE TRACKING DEVICE

Bombay THE TIMES OF INDIA in English 19 Sep 81 pp 1, 5

[Text]

BOMBAY, September 18: The mobile rocket tracking transmitter and receiver, made for the first time in the country at the Tata Institute of Fundamental Research (TIFR) here, will be delivered shortly to the Vikram Sarabhai Space Centre (VSSC), Trivandrum.

The completion of the project symbolises India's rapid progress in radar technology, rendering our defence, civil aviation and communication more self-reliant than ever before.

The equipment, when coupled with the radar systems fabricated by the VSSC, will be able to track objects as small as one sq. m. about 4,000 km. away from the ground.

The special microwave products unit (SMPU) at the TIFR had designed and fabricated the equipment in a record 18-month period for about Rs. 30 lakhs, effecting a saving of over Rs. 70 lakhs in foreign exchange. The imported components in the system form a bare ten per cent of the total cost of the equipment.

The SMPU had earlier supplied two units of the transmitter and receiver which were used for SLV-3 launching at Sriharikota. The latest equipment, apart from being a superior version, is also mobile unlike the earlier ones.

The transmitter is so powerful that in one microsecond, it can generate a pulse of one megawatt. Up to 256 km., the signal from the transmitter will touch the skin of the rocket and will be reflected to the receiver. Beyond that range, it will trigger a transponder" in the rocket to send signals.

The transmitter and receiver were designed by Mr. P. B. Tole and Mr. P. G. Nair, scientists at the TIFR. The servo system for the radar, which enables the antenna to always face the object, was designed by the BARC as it alone has the know-how for this system. The space application centre gave the know-how for the antenna.

The SMPU staff claim that they alone have the complete design competence in the country for fabricating transmitters and receivers for any type of radar. That they have undertaken a Rs. 60-lakh defence project recently provides ample testimony to the claim.

The SMPU has already boosted the strength of our defence radars by replacing the imported critical components with their indigenous products. For example, some Russian-made radars in Bombay could not have been used any longer but for the components supplied by the SMPU. Similarly, the railways are among the beneficiaries as many of their radars got a fresh lease of life with SMPU-made components.

In the next three years, India would have made a major breakthrough in supplying a vital component to our defence aircraft. These special type of transmitters will have to be made from what are known as "hard type modulators". This type of transmitters will elicit coded signals from our own aircraft. If an enemy radar sends a signal, this equipment in our aircraft will not respond and hence, the safety.

So far, all the defence aircraft in our country have been using the imported systems.

Indigenous manufacture of Linear accelerators, used in radiography and radiotherapy, might soon become a reality as a spin-off from the know-how generated by the SMPU.

Another significant contribution made by the SMPU is the "echo box". This has been supplied to Hindustan Aeronautics Ltd. for testing the quality of radars.

India's defence radars can be totally indigenised, if only the SMPU's know-how is backed by the necessary industrial infrastructure to manufacture the products in large numbers to meet the defence needs in a short time.

CSO: 5500/7004

DETAILS OF INDIAN AGREEMENT WITH INSAT TOLD

New Delhi PATRIOT in English 22 Sep 81 p 5

[Text]

INDIA will get 1,500 two-way speech channels from the two INSAT satellites as a result of agreements arrived at with the INTELSAT in Washington recently, reports PTI.

This works out to an increase of about 12 per cent in the presently planned capacity of the satellites, I A and I B, scheduled to be placed in geostationary equitorial orbit in April 1982 and 1983-84, respectively.

An official release says it will also be possible to derive an additional TV distribution channel from each of the satellites.

The understanding with INTELSAT also covered the requirements in respect of the radio network and disaster warning services which will now be provided on INSAT.

The understanding means not only a larger use of the INSAT but a saving of several million dollars for India.

TWO SATELLITES

Two satellites, I A and I B, are being placed, respectively at 74 degree E and 94 degree E longitude positions in the geostationary equatorial orbit as part of the Indian domestic satellite system (INSAT).

These two orbit locations were decided upon by India for coordination with other nearby satellite networks in the Indian Ocean region, in accordance with international regulatory procedures.

The coordination process is intended to ensure that mutual radio frequency interference effects among the various satellite networks are held within permissible limits.

For INSAT, interference coordination was necessary, particularly with satellite networks of INTELSAT (International Telecommunication Satellite Organisation), Indonesia and the Soviet Union.

Detailed discussions had been held by an Indian team with INTELSAT in January 1977. Subsequently, a formal agreement was also signed between INTELSAT and India.

In the coordination process India had agreed to certain constraints on the technical parameters for the INSAT I A satellite, specially for meeting INTELSAT interference criteria, which were stricter than those stipulated by the International Telecommunication Union (ITU). These meant reduced telecommunication channel capacity.

However, in September 1980, INTELSAT decided to fall in line with ITU criteria, which opened up the possibility for India to seek further coordination with INTELSAT in order to enable full exploitation of the potential channel capacity of the INSAT satellites.

CSO: 5500/7007

BRIEFS

GOA TELEVISION STATION--Altinho, 300 metres from the electric sub-station here, has been chosen as the site for a television relay station. The project received an impetus after the Lieutenant-Governor, Mr Jagmohan, visited the site last month and expressed himself in favour of erecting a steel tower to carry the T.V. antenna, instead of an RCC structure. The final design is understood to have been approved by Delhi. According to present indications, the antenna-carrying steel tower will rise to a height of 150 metres, making it the tallest in Goa. The Panaji T.V. station, to start with, will relay Bombay programmes via the wide-band microwave circuit of the P and T department. This circuit links Bombay with Madras. A band III transmitter with 10 kw power will be set up at Altinho. This will provide a service range of 75 km landward, and a T.V. coverage to an area of 10,000 sq kms, serving a population of 8.86 lakhs. The design for the T.V. station building has been entrusted to Mr R Reddiah, a young architect in the PWD. [Text] [Bombay THE TIMES OF INDIA in English 18 Sep 81 p 15]

MOBILE TROPOSCATTER SYSTEM--Bharat Electronics Ltd, Ghaziabad, has produced a transportable troposcatter communication system for the defence forces which is comparable to the best system of its kind anywhere. Consisting of three modules--the electronic system housed in a light-weight fibreglass shelter, a collapsible dish antenna system which is packed in a transit container for transportation and trailer-mounted generators--it can transmit up to 48 voice channels. It will provide the armed forces an ultra-reliable tele-communications system with a range of approximately 200 kms to replace the present line-of-sight and cable systems which are less secure and very prone to atmospheric disturbances. The quadruple diversity system (two antennas) also incorporate digital transmission. It has been tested for one-and-a-half years by the defence forces in different terrain and extreme climatic conditions. Through the indigenous development and production of this system BEL has saved foreign exchange worth Rs 3.20 crore and Rs 18 crore will be saved through the orders on hand. For this BEL received the Gold Shield for import Substitution this year. This is the second time this defence public sector undertaking has won this award. In 1979 it had received it for production of a secondary surveillance radar system for the defence services. [Text] [New Delhi PATRIOT in English 21 Sep 81 p 4]

CSO: 5500/7006

BRIEFS

PAK-PRC DIRECT TELEPHONE LINK--A 3-member Chinese delegation left Islamabad for home on 3 October after concluding a 2-week tour of Pakistan. During their stay in Pakistan, the delegation members held talks with Pakistani authorities on direct links of telecommunications between two countries. A Pakistani telephone and telegraph department delegation will visit China later this year. [Karachi Domestic Service in Urdu 0200 GMT 7 Oct 81]

CSO: 5500/4504

TELEPHONE CENTRALS TO BE CONSTRUCTED IN SEVERAL CITIES

Lima EL COMERCIO in Spanish 20 Sep 81 p A-9

[Text] In January of next year, bids will be called for for the construction of automatic telephone centrals in all provincial capitals that do not already have the service.

This announcement was made yesterday by engineer Miguel Colina, chairman of the board of directors of ENTEL-Peru [National Telecommunications Company], at the official opening of the enterprise's facility in Barranca.

Colina said that over the next 4 years, some 300,000 telephone lines will be put into service and that existing centrals in cities that already have automatic service will be expanded.

"For example, we shall put up 8,500 lines in Huacho in order to meet the demand in that area," he said.

Emergency Telecommunications Situation

In addition, Colina said that in the field of telecommunications, the country is in an emergency situation due to the fact that outside of Lima, there are only 80,000 telephones for a population of 12.5 million people.

"Our telephone density is .7 percent -- that is, under 1 percent. Countries with the same or even less economic development have much higher telephone densities. For example, Colombia has 5.5 percent," he said.

Projects

Colina said that in the face of this critical situation, plans for the next 5 years include a series of projects with an investment of 270 billion sols.

He said that in addition to the installation of automatic telephone centrals, the projects include the expansion of microwave systems, rural telephones, the construction of new stations, the expansion of telex, and others.

Colina added that there are also plans for expanding the system to the jungle, going from Trujillo to Iquitos and passing through Cajamarca, Chachapoyas, Yurimaguas and Tarapoto. "Very soon we shall call for bids," he said.

Automatic Central in Barranca

Colina later revealed that ENTEL-Peru's plan includes the installation of a telephone central in Barranca to meet the needs of its constantly growing population.

He then emphasized the efforts of Barranca's ENTEL workers to achieve the best installation of the facility in order to provide the community with better service.

During the ceremony, ENTEL-Peru area administrator Walter Bazan also spoke, pointing out that 15 new sections had been rehabilitated at a cost of some 20 million sols.

For his part, the mayor of the Barranca District Council, Carlos Bravo, thanked the ENTEL-Peru board of directors for the support given to expansion of the district's facility. "Barranca now has 60,000 inhabitants. It was proper that its needs be met in the field of telecommunications," he said.

The Barranca facility, which now has 15 new sections, was sponsored by Emma Vivero de Colina, wife of the chairman of the board of directors of ENTEL-Peru, and the mayor of Barranca, Carlos Bravo.

11,464
CSO: 5500/2010

BRIEFS

SATELLITE COMMUNICATION STATION--Two modern earth stations for domestic communications via satellite will be officially opened next month on the country's border, according to an announcement made by engineer Miguel Colina, chairman of the board of directors of ENTEL-Peru [National Telecommunications Company]. Colina also reported that one of the stations is located in Chavez Valdivia, a few meters from the confluence of the Comaina and Cenepa rivers, where the Peruvian people achieved brilliant action in defense of the nation's territory in the conflict with Ecuador. The other is in Caballococha (Colombia-Brazilian border), he said, in an area lacking telecommunications services because of its difficult geographic site. Stressing the importance of these two border stations, Colina said that they will make it possible to develop and integrate the region (like the Quillabamba station, also about to be opened). He added that the Chavez Valdivia station will provide support for the garrison tasks of our soldiers assigned to the area and for the conformation of borders in that fertile region. Colina made these statements to EL COMERCIO at the close of the official opening ceremony for the ENTEL-Peru facility in Barranca. [Text] [Lima EL COMERCIO in Spanish 21 Sep 81 p A-7] 11,464

CSO: 5500/2010

BRIEFS

USSR COMMUNICATIONS ASSISTANCE PROTOCOLS--Kabul, 11 Oct (BAKHTAR)--Protocols for Soviet assistance in the development of communications and radio television of the DRA were signed here yesterday between the DRA and the Soviet Union. The protocols provide for the delivery of two 100 kw transmitters for short-wave broadcasts and another 10,000 kw transmitter for medium-wave broadcasts by the Soviet Union to the DRA. The protocols also envisage a survey by Soviet experts fro the betting up of two to four medium wave stations and their antenna's and the future development of TV in Afghanistan. Similarly, the protocols stipulate the development of central and provincial telephones and telegraphs and the surveys of technical equipments needed for the 18 storey building of the Ministry of Communications under construction. In addition the protocols anticipate all-sided Soviet help in the modernisation of a postal system in Afghanistan. [Text] [LD120834 Kabul BAKHTAR in English 0450 GMT 12 Oct 81]

CSO: 5500/5503

BRIEFS

ETHIOPIA, KENYA MICROWAVE LINK--Addis Ababa, 28 Sep--A microwave link that will considerably improve telex, telephone and telegraphic services between Ethiopia and Kenya went into operation Sunday, it was announced here. The link is part of plans by Panafrican Telecommunications (Panaftel) to develop communications between Djibouti, Ethiopia, Kenya, Uganda, Tanzania and Zambia. It is expected to extend north into Sudan within five years. The project cost the Ethiopian telecommunications service about three million dollars to complete between its southern city of Dilla and Moyale, a town on the Kenyan border, 320 km (200 miles) away. (AFP) [Text] [Paris AFRICA AFP in English 29 Sep 81 p 19]

CSO: 5500/5609

BRIEFS

NKUNTUNSE STATION INCOMPLETE--Incomplete infrastructure at the earth satellite station at Nkuntunse may mean that it will be some years yet before Ghana gets its full benefits, reported the MIRROR. It said the international switching centre that will make fully automatic international telephone, telegraph and telex services, is still on the drawing board, and will be sited behind the Accra North Post Office. Telephone callers still have to rely on the manual system through the External Telecommunications Office on High Street in Accra. Nevertheless, the coming into operation of the earth satellite station has reduced the waiting time for booking international calls and has increased the number of such calls. The MIRROR pointed out that the statement by President Limann during the inauguration ceremony of the earth station that ¢344m. would be spent on expending and rehabilitating the domestic telephone network, was incomplete in that he did not say that amount would be spent over a 19-year period. [Text] [London WEST AFRICA in English No 3346, 14 Sep 81 p 2146]

TELEPHONE SERVICE DISRUPTIONS--The Posts and Telecommunications Corporation (P&T) has still not been able to find a solution to telephone breakdowns in certain parts of the city of Accra. This is because, the Corporation has not been able to secure cables for improvization. As a result, some establishments including the Graphic Corporation, New Times Corporation, Ghana Publishing Corporation and Taysec cannot establish contacts with other offices in and outside Accra. The telephone lines of these establishments have been silent for the past three weeks. According to reliable sources within the P & T Corporation, efforts are still being made to secure the necessary materials to improve the situation. [Text] [Accra DAILY GRAPHIC in English 15 Sep 81 p 8]

CSO: 5500

MORE TV CHANNELS, RADIO STATIONS PLANNED

Lusaka DAILY MAIL in English 30 Sep 81 p 1

[Text] PLANS are afoot to introduce more channels on television and increase radio stations, when the mass media complex still under construction in Lusaka becomes fully operational.

Minister of State for Information and Broadcasting Services, Mr John Banda said in Lusaka yesterday that it was the intention of the Party and its Government to introduce three television channels.

It is proposed to have a commercial channel to deal with commercial programmes, a national channel to screen programmes of a serious nature such as humanism and various aspects of the country's development, and an international channel to deal with entertainment programmes.

"We would like people to have a choice. If one does not like a programme on one channel, one would be free to switch over to another channel where there may be programmes which one likes," Mr Banda said.

As for radio, the Minister of State said, it was the intention of the Party and its Government to introduce three main and nine regional stations. The three main stations will be the Copperbelt, Lusaka and External Services.

The Copperbelt station would deal with entertainment programmes, the Lusaka one with serious national issues and the external service, with programmes of international nature, particularly those dealing with liberation movements.

In addition to these main stations, each province would have a regional station to broadcast programmes in local vernaculars. Once these stations are established, the transmission of vernacular programmes from Lusaka would cease.

Mr Banda said all the regional stations would be linked to the mass media complex in Lusaka for news broadcasts.

The minister said there was a misconception amongst some sectors of the community that the mass media complex was being built to provide office accommodation to Zambia Broadcasting Services, Zambia News Agency and Zambia Information Services.

"We are not moving these organisations to the mass media complex so that they have more office space. We are moving them there so that they have more professional facilities to enable them carry out their duties efficiently," Mr Banda explained.

He said the facilities to be made available in the new complex would be more than the three organisation's requirements in the immediate future. It had been planned so that there would be no need for replanning in case of any expansion programmes.

"We have to plan ahead. We do not want to be faced with a situation where we shall be forced to make further extension to the building in order to accommodate future expansion programmes," he said.

CSO: 5500/5607

FIBER OPTICS COMMUNICATIONS SYSTEMS

Riga SOVETSKAYA LATVIYA in Russian 28 Jul 81 p 1

[Article by candidate of the engineering sciences, Yuriy Samoylov: "Horizons in Science and Engineering - Communications through Glass Fiber"]

> [Text] "Physics has placed fiber optics equipment for light information transmission systems at the service of man. Fiber optics lightguides will be incorporated to an increasing extent in telephone, television and other kinds of communications, even in the current five-year plan," said president of the USSR Academy of Sciences, academician Anatoliy Petrovich Aleksandrov at the 26th CPSU Congress. Basic research is underway in the institutes of the USSR Academy of Sciences which will make it possible to design modern communications systems of this type independently of foreign developments.

Mankind is today experiencing an enormous demand for communications. According to calculations by specialists, the volume of information being transmitted through satellites, cable and radio relay links is increasingly annually by 20 to 30 percent. However, despite the magnificent successes of astronautics, the lion's share of the load will, as before, fall on the shoulders of cable lines. A rather severe situation has developed here recently, which has forced scientists to feverishly look for a way out. It has turned out that cable lines fabricated from copper and aluminum have practically exhausted their capabilities. There is no sense in further improving them. The fact is that the more data which must be transmitted, the greater the number of amplfiers which must be placed on a line. And they are complex and expensive electronic devices. Moreover, reliable shielding is needed to protect the cables against various kinds of interference and thereby provide for signal transmission through the line without distortion. An enormous amount of metal is expended for this shielding. As a result, cable thickness and weight are growing inordinately. For example, the weight of the set of cables leading to transducers and indicators in a heavy aircraft runs up to the staggering weight of five tons! And besides this, it is impossible to disregard the increasing scarcity and high cost of nonferrous metals.

With the invention of the laser, hope appeared for the utilization of optical band electromagnetic waves for communications. But the first experiments led to disappointment. Communications was disrupted by rain, fog or snow even over a distance

of a few kilometers. Then the back-lighting from inside fountains was recalled. The light there propagated along the strems of water. The idea of enclosing light in a channel and sending through a thin glass fiber appeared. Soon the fundamental possibility of designing two-layer glass fibers was demonstrated, the core of which is fabricated from a denser glass than the jacket. If a narrow beam of light is directed into the end face of the fiber, then the light travels through it, experiencing multiple complete internal reflections at the boundary between the core and the jacket.

Producing such light guides has proved to a complex technological task. One of the difficulties was related to the different thermal expansions of the glasses which have different densities. With a change in the temperature at the boundary of the layers, such large stresses appeared that the glass cracked. And nonetheless, two-layer fibers promised so much that glassmakers took up the search for glasses which were compatible. In the final analysis, such lightguides were created, but yet another obstacle appeared - enormous light losses as the light travelled through the fiber. Only half of the light introduced into a light guide covered a distance of one meter, while only a thousandth of light energy overcame a path length of 10 meters. It was no secret that glass is completely transparent only in thin layers. If you look into the thin end face of window glass, then you can see it greenish color. This color is due to minor impurities, primarily copper and iron, which get into the glass from the air during its fabrication or along with the raw material - quartz sand. In order to move ahead, it was essential to learn the deep cleaning of material of contaminants.

"In our country," says Professor Mark Zhabotinskiy, "fine quartz filaments with an exceptionally high transparency have now been created. Light, in passing through them over a path of more than three kilometers, is not attenuated by even half. Signals can be transmitted through such a lightguide practically without distortion over a distance of more than 30 kilometers."

Scientists of the Institute of Radio Engineering and Electronics, the Physics Institute, as well as the Institute of Chemistry and the Engineering Physics Institute of the USSR Academy of Sciences participated in the design of lightguide communications systems. The physicists and chemists developed a manufacturing technology for fiber optic lightguides, designed the semiconductor light sources and receivers and also the techniques for introducing the light into the lightguides. Radio specialists developed highly reliable methods of incorporating the information in a light beam and converting the light signals to electrical ones.

The electronic equipment which operates in the complement of modern cable communications lines makes it possible to comparatively simply change over to information transmission via a lightguide cable. For example, in order to convert a conventional cable television system to a light guide system, it is sufficient to replace the copper coaxial cable with the lightguide cable and make small supplemental changes in the transmitting and receiving equipment. At the transmission point, it is necessary to convert the electrical signal to a light signal, and at the receiver, accomplish the back conversion.

A lightguide cable does not differ on the outside from a conventional cable with a polymer protective jacket. But in looking at a section through both cables, substantial differences can be seen. The first thing to strike the eye in a lightguide cable is the absence of the metal shields. They are not needed because lightguides are not afraid of electromagnetic interference. Inside the cable they are from two to several tens of extremely fine glass fibers. Each of them is capable of transmitting a fantastic volume of information - tens of television programs and thousands of telephone conversations. In this case, the spacings between the intermediate electronic equipment, the signal repeaters, can be increased up to 50 to 100 kilometers instead of the 1.5 to 5 km in the case of copper cables. As a result, the number of repeaters is significantly reduced, the construction and operation of the communications lines is simplified and made less expensive, while the weight of the cables is reduced by a factor of 10 or more.

The residents of Moscow, Leningrad, Gor'kiy and some other cities hardly imagine that a portion of their telephone conversations is already being transmitted by means of light. A number of automatic telephone exchanges in the nation are linked together with lightguide cables. They are gradually being incorporated in diverse technical equipment, primarily in that equipment which must operate in the presence of high level electrical interference. The considerable noise immunity of lightguide lines is especially clearly manifest in the design of the technical communications systems which service high power electrical transmission lines. The enormous flows of electrical power transmitted through these lines create a high interference level in their vicinity. And at the moment of emergency disconnections of electrical power lines, interference occurs which is comparable in terms of power to that produced by lightning. This is the same interference which has an impact on various control systems. Failure-free automation is possible only with the use of lightguides.

A short amount of time will pass and the new systems will penetrate into not just communications and industrial automation equipment, but into all areas of our daily life. Without leaving the apartment, one will be able to read as desired books on the screen of a television set, where these books are located in the most remote libraries, as well as view museum exhibitions and have conversations via a videotelephone and do much else which is as yet inaccessible to us.

8225
CSO: 8144/048

FRG TELEGRAM TRAFFIC TO BE COMPUTERIZED BY 1983

Duesseldorf VDI NACHRICHTEN in German 11 Sep 81 p 36

/Article by KHB: "Computers Steer Telegram--Transmission"/

/Text/ As of 1983, the German Federal postal system's entire telegram traffic will be handled even faster via a computer-steered telegram service system (TDS). The installation, valued at about 20 million DM, is to encompass nationwide more than 400 computer terminals and the computer center with 16 processors in the TDS center in Frankfurt. At the computer terminal work places, telegrams from post offices without teleprinters and from telephone participants are received by telephone and transmitted to the center. Post offices with teleprinters and telex subscribers transmit telegrams directly to the TDS center.

The new telegram service system automates all routine work so far done by hand, such as word counting, determination and computation of charges, transmission and archiving of telegrams, as well as the compilation and evaluation of statistics. This, during a prime-time traffic hour with about 8,000 telegrams, makes possible the processing of a telegram even of the lowest priority in less than ten minutes.

The entire system's intelligence was divided into three levels. The central TDS computer system in Frankfurt takes care of the major part of the tasks for all inland, foreign, and transit-traffic telegrams to be processed, such as calculation of charges, forwarding direction, archiving, and statistics. Sixteen computers of the AEG Telefunken second generation ATM, type ATM-80-30, are connected with each other via a wire network of the digital communication system Dikos. The system concept makes possible "around-the clock-operation," since service and repair work on individual computers can be carried out without diminution of operation. Directly connected with the TDS center are about 700 teleprinters of the telegraph terminals III via the Datex L network, all telex subscribers encompassed in the German Federal postal system which dial the TDS center via the public telex network and put their telegrams directly into the system. Also connected are foreign telegraph stations via the Gentex network or via base-circuits as well as foreign telegram computers via base-connect

The computer system's second level consists of 21 concentrators located at the telegraph terminals and distributed over the Federal Republic and Berlin. Computers of the type ATM 80-30 take over the sign-oriented processing of telegrams, for instance word counting, and concentrate or distribute the data flow from and to the intelligent computer terminals which constitute the system's third level. The concentrators are connected with the TDS center via the Datex P network.

The terminal work places connected directly with the concentrators offer comfortable text-processing functions and can easily be used by the operator, even without EDV knowledge. All telegrams arrive here by telephone from post offices without teleprinters and from regular telephone participants.

The total telegram service concept also takes into consideration the treatment of telegraphic transmissions in the postal money order and postal savings offices' money traffic, as well as the transmission of telegrams via coastal transmitters. The software for the entire system is provided by AEG Telefunken with participation of the Society for Process Control and Information Systems (PSI), Aschaffenburg.

9011
CSO: 5500/2005

MEXANDEAU OUTLINES GOVERNMENT'S COMMUNICATIONS POLICY

Paris ELECTRONIQUE ACTUALITES in French 25 Sep 81 p 12

[Article by D. Levy]

[Text] Brest--Last 18 September in Brest, Minister of Posts and Telegraph Mexandeau inaugurated the E10 telephone exchange supplied by CIT-ALCATEL [International Telephone Company-Alsatian Company for Atomic, Telecommunications, and Electronic Construction]. With that exchange, the world's 2 millionth E10 time division line has gone into service. According to the manufacturer, this is the first time that a time division system anywhere in the world has reached that level. And the E10's prospects look just as bright. The 7.5 million lines in service or on order in 25 countries will probably be doubled within a few years, considering expansion plans in the countries in question. In that context, the new PTT [Postal and Telecommunications] administration seems determined to give the E10 a push by favoring orders for that system in preference to its competitor, the MT system produced by Thomson-CSF [Thomson-General Wireless Company]. And Mr Dondoux, director general of telecommunications, said in fact that by 1982, the E10 would be the telephone system most purchased by the administration. It would account for 45 percent of the total number of lines ordered, compared to 40 percent for the MT and 15 percent for "other systems."

The inauguration of the Brest exchange, to which the 2 millionth E10 time division line was connected, was the occasion for a big ceremony (some even considered it excessive) that was attended by ministers and directors general of telecommunications from about 20 countries.

In his inaugural speech, Mexandeau paid tribute to "the fathers of time division switching--Libois and Pinet--and to the CNET" [National Center for Telecommunications Studies]. They were the originators of the E10 system, which was then produced industrially by CIT-ALCATEL. He also saluted the leading position and dynamism of the French time division switching industry, referring to Thomson-CSF's MT system as well as to the E10.

Mexandeau touched upon the nationalizations, emphasizing that "the government has chosen the electronics industry as the pilot industry for expansion of the public sector, seeing that with the exception of large foreign firms such as IBM and Philips and the SAT-SAGEM-Signaux [Telecommunications Corporation-Company for General Applications of Electricity and Mechanics-Signaling and Electrical Contracts Company] Group, all the large firms in that industry are to become subsidiaries of the state

or of nationalized firms. Even before those decisions are implemented, I regard electronic switching as exemplary--it shows that national political will in an advanced technology industry can produce convincing results, even in a sector dominated internationally by multinational corporations."

Meets Standards

The Brest exchange ushers in a new generation of the E10 system, since it is equipped with the first of the new E10B's. Compared to the E10A, which was ordered by the PTT until 1977, the E10B has twice as much capacity (128 selector units instead of 64), bringing its TST [expansion unknown] connection system up to 3,000 erlangs (or 4,500 erlangs in another version), or 30,000 subscribers (or 45,000 subscribers in the other version).

That modification of the connection system is accompanied by increased processing capacity in the control units (microprocessors with special software) and by the application of modern technologies. Moreover, the E10B is equipped with a new subscriber connecting unit (the CSE 1000).

Lastly, the Brest exchange is the first E10 system to meet the PTT's new standards: the NEF (Development and Operating Standards)--started in 1975 on the initiative of Mr Souviron, then head of the DAII [Industrial and International Affairs Division of the General Directorate of Telecommunications], and later drawn up on the basis of proposals drafted by the CNET--and the NSS (Service Standards and Specifications), which was introduced in February 1978.

Toward a Reversal of PTT Quotas?

Although just starting in France, the E10B is already in service in Yemen, Qatar, and Sri Lanka--140 of those exchanges are on order in France, and 200 are in operation.

It is interesting to note that parallel with its development of the E10B (even though delivery times were exceeded by 1 year), CIT-ALCATEL was able to engage in the international marketing and development of its E10S version, which has a highly decentralized control system allowing it to serve from a few hundred up to 8,000 subscribers. The E10S, which is oriented toward computer communications applications, has already been chosen by the PTT for its CTA (Directory Terminal Concentrator), as the interface with the Telecom-1 ground system, and for equipping the switching and management networks for the future cellular radio ("CORPAC") systems.

The PTT also seems determined to give the E10 an additional push by favoring orders for that system over the MT20. During the press conference that followed the inauguration in Brest, Dondoux said that in 1982, the E10 system will be the most-ordered system in France, with 45 percent of the total number of new lines, compared to 40 percent for the MT20 and 15 percent "for the other systems" (AXE, 11F and, possibly, the System 12, which is still in the experimental stage). Investment credits for 1982 will remain constant in volume.

In the absence of further information, it is impossible to tell from those remarks whether they signal a reversal of the quotas assigned to the two main suppliers of

PTT exchanges. This year, orders for switching equipment (representing approximately 5 billion francs) were allocated at the rate of 46 percent to Thomson-CSF and 42 percent to CIT-ALCATEL. But this was a question of money values. The difference in the number of lines is not significant (line costs differ depending on whether they represent expansion or new lines). Moreover, the number of lines ordered from a manufacturer in a given year is not known until 31 December of that year. The statements by the new director general of telecommunications therefore reflect the fact that the E10, which is available and less expensive at the moment than the MT (with which there are delays) represents a better bet for keeping things moving than the MT. And it could lead in the long run to a reversal of the quotas (in francs) assigned to the two manufacturers.

11798
CSO: 5500/2011

BRIEFS

TELECOMMUNICATIONS SYSTEM SLOWING MODERNIZATION--The National Telecommunications Administration is seeking an investment budget of 1 billion, 439 million kronor for the 1982-1983 fiscal year. At constant prices, that is about 46 million kronor less than its investments during the current fiscal year. The National Telecommunications Administration will finance most of the proposed investment budget from its own depreciation reserves. The net amount being requested from the national budget is 78 million kronor. The National Telecommunications Administration is modernizing the telephone system by replacing electromechanical equipment with electronic equipment. That project is expected to be complete at the start of the 21st century. The company is now slowing the pace of its modernization, and that explains the drop in investments. As far as radio and TV are concerned, the investment appropriations for coming years were reduced by the budget bill submitted in January 1980. The result is that a fourth FM network is being postponed, special transmitters for regional TV will be scrapped over the next few years, and so on. [Text] [Stockholm SVENSKA DAGBLADET in Swedish 7 Sep 81 p 3] 11798

END

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JPRS 79372

4 November 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 187

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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JPRS 79372

4 November 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 187

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BRIEFS

CZECH-ANGOLAN NEWS AGREEMENTS--Prague, 9 Oct (CETEKA)--Agreements on cooperation between the Czechoslovak news agency CETEKA and the Angolan news agency ANGOP, and between Czechoslovakia and Angolan television were signed here Friday, on the occasion of the current official friendly visit to Czechoslovakia by Jose Eduardo dos Santos, chairman of the MPLA-Party of Labour and Angolan president. The agreements were signed by CETEKA General Directro Otokar Svercina and Czechoslovak Television General Director Jan Zelenka, and by member of the visiting Angolan delegation Paulino Pinto Joao, state secretary for cooperation. The two sides agreed on the exchange of information aimed at deeper understanding between Czechoslovakia and Angola and better knowledge of the two countries' achievements and stands on international problems. [Text] [LD100529 Prague CTK in English 1802 GMT 9 Oct 81]

'KCNA'-TANZANIAN NEWS AGENCY AGREEMENT--Pyongyang, 18 Oct (KCNA)--An agreement on exchange of information and mutual cooperation between the KOREAN CENTRAL NEWS AGENCY and the SHIHATA NEWS AGENCY of the United Republic of Tanzania was signed in Dar es Salaam on October 12, according to a report. The agreement was signed by the DPRK ambassador to Tanzania on behalf of the KOREAN CENTRAL NEWS AGENCY, and the director of the SHIHATA NEWS AGENCY. [Text] [SK180909 Pyongyang KCNA in English 0843 GMT 18 Oct 81]

CSO: 5500/2016

BRIEFS

'VNA', 'SPK' COOPERATION AGREEMENT--Hanoi, 14 Oct VNA--An agreement on cooperation for the period 1981-1985 between VNA and SPK was signed here today. The signatories were Dao Tung and Em Saman, directors-general respectively of VNA and SPK. Under this agreement the two news agencies will help each other to improve newsreporting, build the technical basis and train media and technical workers. [Text] [OW141601 Hanoi VNA in English 1537 GMT 14 Oct 81]

TAIWAN, JAPAN TV COOPERATION--Tokyo, 19 Oct (CNA)--The China Television Company Ltd of the Republic of China and the Nippon Television station, the largest private-owned television station in Japan, Monday entered into sisterhood relations. A signing ceremony was held Monday afternoon at the Nippon Television station in Tokyo with President Mei Chang-ling of the China Television Co., Ltd., and Kobayashi Yosoji, president of the Nippon television station as well as president of the YOMIURI SHIMBUN CO., jointly presiding. Following the establishment of the sister-hood relations, the two TV companies will strengthen their cooperation and exchanges of information in the field of television broadcasts. Ma Soo-lay, representative of the East Asian Relations Association in Japan, was invited as a guest to attend the signing ceremony. [Text] [OW191101 Taipei CNA in English 1028 GMT 19 Oct 81]

CSO: 5500/2016

TELECOM STUDIES INTRODUCTION OF OPTICAL FIBRE NETWORK

Canberra THE AUSTRALIAN in English 22 Sep 81 p 21

[Article by Nicholas Rothwell]

[Text]

AUSTRALIA's first optical fibre telephone network, a high powered communication system which can transmit the entire Encyclopaedia Britannica in under a second, has been unveiled at Sydney University.

The new telephone system was designed with the help of Telecom, which is considering the development of a national optical fibre network.

Optical fibres work by sending messages — in the form of pulsed light — down a thin sliver of glass wire.

They are far cheaper than copper wires and would facilitate a vast expansion of the national telephone network.

Optical fibre telephones are already in use in the US and in England, where they have increased the efficiency of telephone exchanges.

Telecom has already installed small test systems in Melbourne, and there are some point-to-point optical fibre links in NSW, including one operated for the Ministry of Defence.

But the Sydney University system is the first "live" network, and it is being closely studied by Telecom experts.

"The new system is invaluable because it has given us an idea of the problems and benefits of using optical fibres in Australia," a Telecom spokesman said.

The advantages of optical fibres were the high speed of the new networks, the cheap glass used to connect telephones instead of the expensive copper wire used in conventional networks, and the vast potential for expansion in optical fibre systems.

"The carrying capacity of optical fibres is so much greater that we will be able to place more telephone lines in a single cable," the spokesman said.

Sydney University expects to expand the network to connect its entire technical complex and hopes to become a showplace for other organisations, with computers, terminals and telephones scattered over many buildings.

Organisations such as hospitals, which need quick and reliable connections between their computers and telephones, are likely to adopt the new technology.

The University Computing Centre network manager, Mr Brian Rowswell, said the system had already saved the university $14,000 in rental of conventional equipment from Telecom, and would save hundreds of thousands of dollars in rentals of signal processing equipment.

CSO: 5500/7503

STATE TO CONTINUE TRADITIONAL, BUT NOT CABLE, TV CONTROLS

Canberra THE WEEKEND AUSTRALIAN in English 12-13 Sep 81 p 7

[Text]

THE Federal Government has committed itself to maintaining control over television and radio services, ruling out any early prospect of self-regulation in the industry.

But the Minister for Communications, Mr Sinclair, hinted yesterday that private enterprise would have control over cable television.

The policy statement caught industry sources by surprise – and disappointed them.

Mr Sinclair said: "I cannot see any radical reduction in the Government's involvement in traditional broadcasting services."

The broadcasting industry has insisted that self-regulation should be the reward for complying with open public hearings for television and radio licence applications or renewals.

Mr Sinclair argued that for technical reasons, principally the limitations of the broadcasting spectrum and a public concern about standards, there were good reasons for government regulation.

But he effectively foreshadowed a cable TV industry free of the kind of regulations applied to conventional broadcasting.

COMPETING

Mr Sinclair emphasised the difference between cable TV and current services, saying the new technology would make no demands on the radio spectrum.

He said if there were limited Government involvement in cable television, the policy of limiting interests in the ownership of broadcasting stations might also have to be reviewed.

In a wide-ranging speech to the Committee for Economic Development of Australia in Sydney last night, Mr Sinclair said:

- Telecom had powers to breach its monopoly on telecommunications services, enabling it to authorise outside involvement in the system.
- It was possible that private enterprise could become involved in the postal system, competing with Australia Post by providing "value added" service for faster mail deliveries.
- Broadcasters would in future have to provide detailed specifications for new services or changes to existing facilities. This was formerly done by the Department of Communications.

The Australian Broadcasting Tribunal will shortly launch an inquiry into the introduction of cable television and off-air television for subscribers.

Although a departmental submission will be lodged, Mr Sinclair effectively outlined the principles of government policy on cable television.

He said market forces should determine the number of cable services. Under these circumstances, the Government would merely set out the technical specifications with which the services would have to comply.

CSO: 5500/7502

CONTRACTS SOUGHT FOR NEW CABLE LINK WITH CANADA

Sydney THE SYDNEY MORNING HERALD in English 10 Sep 81 p 25

[Article by Susan Woods: "$350M Sea Cable Contracts Expected"]

[Text]

Contracts for the largest single international telecommunications project, in which Australia has more than a 50 per cent interest, will be announced early next month.

The $350 million ANZCAN submarine cable, which will link Australia and Canada 15,000 kilometres across the Pacific, will provide substantial work for local manufacturers of telecommunications equipment.

The cable is even more expensive than Australia's proposed domestic satellite, currently estimated to cost $282 million.

Australia's Overseas Telecommunications Commission will be the major shareholder, with a contribution of $200 million.

Worldwide tenders for the cable's design, manufacture and installation were called in October last year and closed in February. Specifications called for as much participation as possible by Australian, Canadian and New Zealand industry.

From Australia, the cable will pass through Norfolk Island, where a small spur cable will shoot off to New Zealand, and then through Fiji and Hawaii, to Canada.

Several companies are understood to have bid for the ANZCAN contracts, although not all have bid for both the manufacture of terminal station and submarine equipment, and laying of the cable.

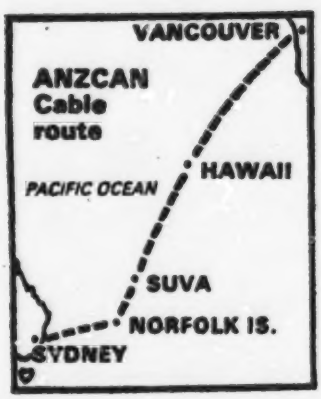
Some companies manufacture repeaters (which reinforce signals along the cable) while others manufacture cable itself.

The companies include an American group, part of the American Telephones and Telegraph system, which makes repeaters, and Simplex, which manufactures cable.

A French consortium, Submarcom, has tendered, as have three Japanese companies, Fujitsu and NEC, both of which make repeaters, and Ocean Cable Company, which manufactures cable and is owned by the other two companies.

Standard Telephones and Cables in the UK has also bid.

OTC's assistant general manager of corporate services, Mr Peter Meulman, who is also system manager of the ANZCAN project, said contracts for the actual manufacture and laying of the cable system would be placed immediately following the signing of an international agreement in Vancouver early next month.



ANZCAN will replace the existing link between Australia and Canada, COMPAC, built in 1962 but with a limited design life.

"COMPAC will be allowed to fade away gracefully, like a little old lady, until it's no longer economic to operate," Mr Meulman said. The new cable will carry more than 1,200 circuits, 15 times the capacity of COMPAC. It will relay all telecommunications — such as telephone and telex — except for television which is transmitted by satellite.

CSO: 5500/7502

DOMESTIC SATELLITE FINANCING VIEWED; CONSORTIA CONCEPT OPPOSED

Melbourne THE AGE in English 17 Sep 81 p 21

[Article by Lorenbo Boccabella: "Satellite Share Float Planned"]

[Text]

The Federal Government plans to offer shares to the public in Australia's proposed domestic satellite.

The Government has already decided in principle to retain a 51 per cent stake in the satellite with the rest being offered to private enterprise for investment.

Until now it was not clear if the private enterprise share would be taken up by consortia of companies in non-sharemarket transactions.

Now a committee of Federal Cabinet comprising Ministers for Communications, Finance, Treasury and Transport has approved of the public share float concept.

The satellite will revolutionise television services to Australia as it creates the prospect of direct TV reception to both the outback and the cities.

It will also provide a myriad of services ranging from business data, telephone, school of-the-air and general competitive facilities to what is now provided by Telecom.

However, the Government has not yet settled what type of ownership and control limitations will be placed on the holding of the shares in the private sector of the satellite.

Some controls are envisaged as the Minister for Communications, Mr Sinclair told a House of Representatives Estimates Committee this week that there were delays in establishing the public corporation because of the need to satisfy Stock Exchange requirements.

The scheme envisaged in the short term is for a proprietory company to be set up with private enterprise membership on the board.

This board will then examine the four tenders which have been received for the space segment.

The cost of the satellite project ranges up to $500 million but at this stage it is not known how much of this will consist of share capital.

Mr Sinclair also told the Estimates Committee that the Commonwealth would own the actual satellite in space which tends to suggest that the Satellite Corporation will enter into some type of leasing arrangement.

The Government appears to have moved against the consortia ownership concept because of the difficulties which could arise in competing corporate interests seeking representation on the board.

Australia's media groups have organised themselves into consortia which are examining the satellite question.

The eventualfloat could see a scramble into how the satellite cake will be carved up.

CSO: 5500/7502

WA INSTITUTE UNVEILS LOW-COST, MICROPROCESSOR AIR BEACON

Canberra THE AUSTRALIAN in English 22 Sep 81 p 22

[Article by Joe Poprzeczny]

[Text]

A WEST Australian electronics consultant working at the West Australian Institute of Technology has developed a low cost aviation non-directional beacon.

The device if commercially produced could be supplied to isolated communities and settlements for less than $1000.

Mr Trevor Marshall, of WAIT said: "The system relies on a single Intel 8035-11 microprocessor which can be coded in the field.

"It was designed at the institute and a prototype has been operating near the Royal Flying Doctor Base at Ivanhoe near Broken Hill."

Mr Marshall said the prototype was constructed last year by final year electronics students at the Institute.

"It has been operating faultlessly in the Broken Hill area and its extremely economic advantages mean the outback and developing countries in Africa and South-East Asia would be ideal markets for a commercial producer," he said.

The system's microprocessor allows easy programming of the identification signal to enable modification of the beacon network without the necessity for equipment to be removed from the field.

The optimum power supply is from 20 to 28V DC at the output of the regulator. A higher radio frequency output of 50W is available at the higher voltage, but it is of no consequence unless the licence permits it.

At the 20V level a 24V bank of lead acid cells can be operated to 100 per cent capacity without losing performance and more than 20W of radio frequency is available.

Commenting on the cost factor, Trevor Marshall said: "The final implementation cost of this approach is considerably less than that of an equivalent system.

"Easy reprogramming and zero ageing of modulation parameters minimises operational costs.

"Manufacturing costs are low as the digital circuitry requires no adjustments or calibration after manufacture."

He claims that officials at the Government Aircraft Factories see a need for the low cost system, but a commercial manufacturer is needed to produce and market the system.

CSO: 5500/7503

DATEC SPURS COMPUTER INDUSTRY DRIVE FOR SUBSCRIPTION TV

Canberra THE AUSTRALIAN in English 29 Sep 81 p 21

[Text]

LOCAL software house Datec Pty Ltd is spearheading a computer industry drive to set up an over-the-air subscription TV (STV) service in Australia.

Datec's managing director, Mr Harry Douglas, has set aside $2 million for start-up costs and Prime Computer managing director, Mr Lionel Singer and Dr Tom Wenkart, of Morlea Professional Services and Pace Computer Group, are geared to contribute a further $2 million each towards a joint venture.

In one of the latest of 188 submissions lodged for the national inquiry into pay-TV which begins on October 10, Datec argues that the only immediate and relatively low-cost way to introduce this service is by STV.

Australia should by-pass cable TV at this stage, the submission states, because developments in light-bearing glass fibre technology will supplant the present electrical copper-wire cable TV system later this decade.

"After reading all the submissions to the Australian Broadcasting Tribunal, Datec appears to be the only one presenting a detailed business plan for introducing radiated pay-TV," Mr Douglas said.

"An STV operation is computer-driven in practically all its aspects, yet, apart from a few mostly overseas suppliers, there has been scant interest among Australian data processing companies in obtaining a licence."

The Datec group proposes that it lead a syndicate of equity shareholders to build a small UHF television station at a cost between $2 million and $3 million, including studio equipment and two TV transmitters.

This syndicate, made up of seven suggested types of members, would contribute $5 million in liquid assets at the time an STV licence was granted – constituting 51 per cent of total paid-up shares of about $10 million.

Subscribers would pay an estimated $20 a month for special films, sporting events and in-depth news and documentary programs.

The installation fee would be $50 and subscribers would pay about $50 more for a decoder box which would unscramble the signals and which would require only minor modification to an existing TV.

Three computers and ancillary equipment costing about $1 million would be required for an STV operation, Mr Douglas said.

AUDIENCE

There would be room for only one operator per capital city and with the present cost of equipment and programming the only viable locations would be Sydney, Melbourne and the Gold Coast.

Each could have more than 100,000 subscribers in the longer term, he said.

The Datec submission points out that Sydney has a potential audience in close range of a simple transmit-

ter/antenna, so that elaborate and expensive equipment would not be necessary.

This refers to the population band which extends from Sydney's eastern suburbs in a direct line to the west and could be reached from any of the tall buildings in the Sydney-Kings Cross area.

The group estimates total operating costs for STV at $7 million a year for the first two years, rising to $11 million a year as subscribers build up to the break-even point of 50,000.

The level of 50,000 subscribers would be aimed for at the end of the second year — two years after granting of the licence and 15 to 18 months after the service is first switched on, Mr Douglas said.

At the level of 70,000 subscribers, the running costs would be about $12 million a year and trading profit before tax and dividend would be around $5 million yearly.

Datec has already applied for a choice of several business names for an STV operation and expects to provide up to $30,000 for its wholly-owned education and research company, Datec Institute Pty Ltd, for further market research to define initial consumer needs.

The cost of preparatory work by the new company to be set up to prepare a licence application would be well in excess of $100,000, Mr Douglas said.

Datec says it has also had talks with two Australian microcomputer manufacturers with a view to local manufacture of decoding boxes, the design of which could be obtained under licence from the US, but which it considers would be relatively simple to develop from scratch in Australia.

The submission points out that one of Datec's inhouse computers, a Hewlett-Packard Series III, is the same as that used by Selectv in Los Angeles for central computer control of its STV operation.

"Our staff could modify the Selectv computer programs for an Australian operation — and probably other STV programs from the US — more quickly and at less cost than other potential STV operators in Australia," Mr Douglas said.

The submission, made jointly by Datec and Harry Douglas Pty Ltd, follows two research trips Mr Douglas made to the US earlier this year.

In addition to Mr Singer of Prime and Dr Wenkart of Pace as likely members of an STV syndicate, Datec recommends the following:

- ONE media member, from either radio, film or the print media, not already involved in commercial TV.
- A BROADLY-based Australian public company, preferably a major retailer with strong experience in consumer product marketing, bulk billing and credit control.
- AN up-and-coming Australian film maker, with the aim of establishing close links with the local and overseas industry.
- A SENIOR chartered accountant with a proven record as an entrepreneur in high technology.
- A COMPANY in the business of installation and service of consumer products in the home on a large-volume basis.

The group has nominated Harry Douglas Pty Ltd and Datec Pty Ltd as major equity members and envisages that foreign ownership should be no higher than 15 per cent.

Pointing to flexibility in control, Datec suggests the board of directors for an STV operation would not necessarily be the same as the syndicate members.

The group says it plans to encourage Australia's burgeoning film industry by negotiating for first release. For example, a series such as A Town Like Alice could command an extra fee from subscribers with one-half going to the film maker.

It believes an Australian STV operation should strive for 30 per cent local content, but suggests that in the early stages a firm quota percentage need not be imposed.

CSO: 5500/7503

TECTRAN EXPANDING OPERATIONS IN MULTIPLEXOR MARKET

Melbourne THE AGE in English 29 Sep 81 p 31

[Text]

Tectran, a Sydney-based data communications company, has opened an office in Melbourne to gain a greater share of the growing multiplexor market.

Multiplexors are of growing importance because of their ability to boost data transmission capacity between two points.

This capability is essential in Australia where major capitals are so widely separated.

Tectran opened the Melbourne office last week following good sales in Sydney.

"We've been very successful there," the company's new branch manager, Mr Clive Hendry explained. "In the last 12 months 20 major companies in Sydney have brought Comdata multiplexors."

He said Tectran had 40 per cent of the Sydney market in 1980-81, and its sales have expected to top $1.8 million in the next 12 months.

Already the company is thinking of further expansion. A Brisbane office is due to open next month, and offices will open in Adelaide and Perth before the end of the year.

Multiplexors, allow multi-terminal use of a single Telecom link.

Without a multiplexor, only one terminal can communicate with an interstate host computer. Multiplexors allow two, four, or even eight terminals to use the link at the same time.

Because of this capability and the fact that they sharply increase transmission speed data costs are much cheaper.

"A Telecom modem link between Melbourne and Sydney rents for about $20,000 a year," Mr Hendry said. "So if you want two terminals talking to a host computer, you have to rent two lines, and that's expensive.

"Instead, you could buy two multiplexors for $5000, and have a four-terminal capacity. It's much cheaper."

Tectran's Comdata 520 allows straight point-to-point multiple transmission. Its 550 allows networking, such as a link from Melbourne to Sydney, then on to Brisbane and Townsville.

Tectran's 520 has a capacity of up to eight channels, asynchronous, with a transmission speed of 9600 bits a seconds.

Mr Hendry said a 16-terminal link between two points would cost from about $12,000. "This is done using four multiplexors, two at each end of the line," he said.

CSO: 5500/7503

BRIEFS

INTELSAT INTERCEPTS--The product from an "antenna farm" at Welshpool may soon have a dramatic effect on the lifestyle of people living in remote areas of Australia. A Perth-based company is making low-cost earth stations to trap TV signals from the Intelsat TV satellite in stationary orbit 36,041 km above the Pacific Ocean between Hawaii and the equator. The earth stations, destined for domestic use on homesteads and mining camps in faraway places, consists of a spherical antenna which reflects signals from Intelsat IV to a horn placed at the critical focal point in front of the antenna. The extremely weak signals from the satellite are amplified 100 times before being fed into the converter. The signals are then fed into any domestic TV receiver. There is a choice of programmes from either Channel 2 in Perth or Sydney. A fully-operational earth station will be set up at the Royal Show next month. The complete system will cost about $6000. Two of the earth stations have been established so far in WA, one at Laverton and the other at Yeelirie. [Text] [Perth THE WEST AUSTRALIAN in English 18 Sep 81 p 10]

CSO: 5500/7503

CENTRAL TELECOMMUNICATIONS RESEARCH LABS SET UP

Lahore THE PAKISTAN TIMES in English 13 Oct 81 p 5

[Text]

ISLAMABAD, Oct. 12: Telegraph and Telephone Department has established central telecommunication research laboratories at Islamabad with the technical co-operation and financial assistance of Japan to promote study and research in various fields of telecommunications in Pakistan, says a handout.

The Federal Minister for communications, Mr. Mohayyuddin Baluch, will perform the opening ceremony of the Rs. 118 million project tomorrow.

The laboratories will be responsible to undertake design and development of new equipments and systems for the specific requirements of Pakistan and recommend their economic means of production.

It will study the technology and present systems in use in the country and those developed by the advanced countries.

It will also watch and oversee the progress and developments in various telecommunication fields in the world and conduct research in those fields.

It will also be its responsibility to study and keep T and T abreast of the latest developments in telecommunication techniques and systems in international communications and regulations, in international forums like the International Telecommunication Union (ITU), and International Satellite Organisation (INTELSAT) etc.

Establishment of the telecommunication was made possible by Japanese Government grant assistance of 2200 million yen (about Rs. 84 million), out of which 1,566 million yen have been spent on the construction of the building and 634 million yen on various telecommunication systems and research equipment imported from Japan.

CSO: 5500/4506

BRIEFS

THIRD WORLD NEWS ORGANISATIONS--Lahore, Oct 15--Raja Mohammad Zafarul Haq, Federal Minister for Information and Broadcasting, yesterday said that there was a growing desire in the Third World countries to have a wider mutual news exchange programme in order to ensure the dissemination of factual and objective information. Speaking as chief guest at the installation of the APP Employees Punjam Union at the Lahore Chamber of Commerce and Industry premises, he said the Third World had realised that some of the major world news agencies were not completely objective in their reporting. In many cases, these news agencies circulated information which was of little interest to Third World countries and totally ignored information which was of immense importance to these countries. Certain powers, he said, even used their news mecia to destabilise a particular country or to put it on a particular channel. In order to meet this challenge, he said, the Third World countries wanted to enlarge the scope of exchange of news among themselves through their own news organisations.--APP [Text] [Karachi DAWN in English 16 Oct 81 p 15]

CSO: 5500/4505

TELEPHONIC WIRE NETWORK TO BE PROTECTED FROM THEFT

Hanoi HANOI MOI in Vietnamese 28 Aug 81 p 3

[Article by Trong Nghia: "Protect the Wire Lines for Signal Communications"]

[Text] People have frequently complained about the difficulty to make a telephone call to communicate with agencies and enterprises outside the city! This difficulty has many causes. For example, at the telephone center in the first 6 months of this year, long-distance calls could not be placed in 28,200 instances of which 10,900 were caused by wire trouble, 4,375 by mechanical breakdowns and 10,900 by rental problems. In the intraregional wire network, there were 1,229 (7 percent) more cases of loss of communication than in the same period last year. The signal communication wire network is composed of many types of wire: bare wires, flexible wires, plastic covered cables, round and flat cables and so on. Though cable lines provide a high signal quality, the rural districts are still using mainly bare iron wires and flexible ones. In the outskirts, most of this wire network crosses desert fields and runs alongside dikes and communication roads. Over the past few years, the policy of the posts and telegraph sector has been to develop the telephone network on the district scale to promote the building of agro-industrial districts. Many factories, schools and agencies are concentrated at certain places in the suburbs. Therefore, the need to communicate by telephone has increased and been partly met. Apart from the network belonging to the posts and telegraph sector, there are now in the rural districts signal communication wire networks pertaining to the army and the railroad sector as well as wire radio networks established by the wire radio management and operation enterprise. The signal wire line belonging to the posts and telegraph sector alone includes more than 1,800 kms of "surface" wire [giaay nooir] and 159 kms of cables.

At night, it is very difficult to protect the wires which cross desert areas. This difficulty has been taken advantage of by dishonest people to stealthily cut wires. They usually hang around in groups of 2 or three persons and carry out their activities on the road sections far from residential areas. To conceal their illegal acts, a number of them pretend to go out to catch frogs or wear army uniforms and rucksacks to impersonate on-duty militarymen. It must be noted that there are from 60 to 100 cases of wire theft per year. In only 2 years--1979 and 1980--the total length of stolen wires in the rural districts came to over 100 kms. In the first quarter of this year, there was a loss of more than 19 kms of iron wires, more than 7 kms of flexible wires and 110 meters of cables. In only one night, the village of My Dinh (Tu Liem District) lost 1,400 meters of iron wires, the village of Thanh Xuan (Soc Son District) lost 2,100 meters and

the Gach posts and telegraph station (Phuc Tho District) 3,000 meters. There was a year when only a month after its construction, the wire line from the Dong Anh posts and telegraph station to Thuy Lam and Lien Ha lost a length of 12 kms of iron wire. The stolen iron wire was sold by evildoers to illegal businessmen to make frames to hold loads [at the ends of carrying poles], and to make baskets, nails, bicycle wheel spokes and so forth.

This situation has greatly hampered the maintenance of signal communications. There was a year when communications were cut off for more than 90 hours on the average each month. On the other hand, this means a loss of socialist property, especially of materials which cannot yet be produced domestically.

In compliance with Directive No 230 of the Premier's Office, the Municipal People's Committee has ordered the levels and sectors concerned to strengthen the protection of wire lines. Almost all rural districts have held seminars on this subject. Dong Anh District has taken numerous protective measures and coordinated the mass movement with the activities of the forces in charge of maintaining order and security in villages. One of these measures is the signing of a pledge to protect the wire line between the chairman of the district people's committee and the chairman of the people's committee of the village whose territory is crossed by the wire line. The pledge states: "...we will assume the protection of the posts, telegraph and radio wire line from...to..." and will simultaneously "pay attention to inculcating in the cadres, party members and people in the village a sense of responsibility and an awareness of the need to protect the wire line...and to ensure its safety under all circumstances; the village people's committee will be responsible for any loss or damage." This kind of pledge pinpoints responsibility and, if thoroughly implemented, will help limit the abovementioned negative practices. Though having paid attention to executing the high level's directive, many localities have not yet fully realized their responsibilities. In this respect, it must be clearly said that it is necessary not only to detect and prevent losses due to theft but also to consciously protect the wire lines from deterioration. People in a number of areas have the habit of attaching buffaloes and cattle to wire poles (which will likely break up and fall down before long because they are made of bamboo or wood); worse still, children have thrown stones at the porcelain pots to break them off and take sulphur or have even cut off wires (in Phu Lo Village, Soc Son) and dug up poles and taken them home for use. To insure signal quality, it is necessary to properly maintain cables and to avoid hitting them and damaging them.

In the future, the signal network in the rural districts will be further developed. The post and telegraph stations of Trau Quy, Tu Liem, Thanh Tri, Dong Anh and Son Tay have recently begun to set up automatic switchboards. In Lang, a 5,000-number switchboard has been installed with a 120-line FRC microwave to intensify the intermediate relay [trung kees] for the Gia Lam and Dong Anh posts and telegraph stations. In addition to concentrating on serving local leading organs, these projects are designed to expand the signal network to important agricultural villages, to vegetable growing areas and to typhoon and flood control centers.

The Municipal People's Committee has issued "regulations on the management and protection of signal communication wire lines." Since these regulations have a legal basis, the levels and sectors concerned and the entire people have the duty to implement them.

9332
CSO: 5500/4503

BRIEFS

RADIO-TV INSTALLATION INAUGURATED--Dimitur Trifonov, special RABOTNICHESKO DELO correspondent, reports as follows from the Orelyak mountain peak in Blagoevgrad Okrug: The area of the Orelyak peak was previously known only for its particular beauty and for the historical significance of the spot where the Pirin area patriot Yane Sandanski was killed. Today a modern radio-television center is going up here and the first experimental program on Bulgarian television will be broadcast from here tonight. "A powerful and high-quality signal will cover the territory of the Blagoevgrad Okrug and part of Smolyan and Pazardhzik okrugs as well," the engineer Ilya Semerdzhiev, the director of the "Radio Stations and TV" section attached to the Ministry of Communications, explains. He adds: "The construction workers commissioned this project 16 months ahead of schedule. We now have to use the equipment installed here in an efficient manner so as to be able to transmit high-quality radio and television programs from here." The design of this unique equipment was worked out by experts from the Insproekt Experimental Institute attached to the Telekompleks Scientific Research Enterprise. The work was carried out under extremely difficult weather conditions. The tower is 105 meters high and there is antenna equipment attached to it. The construction was carried out by Sofia Building-Assembling Administration and many highly experienced construction workers and technicians participated in this project that was accomplished within a year. [Summary] [AU041639 Sofia RABOTNICHESKO DELO in Bulgarian 3 Sep 81 p 1]

CSO: 5500/2016

RECIFE INITIATES INSTALLATION OF ATLANTIS SUBMARINE CABLE

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 29 Sep 81 p 16

[Text] Recife--Work began yesterday at Boa Viagem beach in Recife to launch the Atlantis submarine telecommunications cable, which will have a capacity of 1,380 new circuits and provide services of telephone, telex, facsimile and information transmission from Brazil to Europe via Africa. This week, the Danish cable-launching ship, Gulstav Trader, will lay the first section extending about 4 miles from the Pernambuco coast.

A buoy will mark the end of the cable in the sea and in November steps will be taken to lay the cable in deep water, beginning at that point. A launching similar to that of Recife will occur in Dakar, Senegal, directed toward Brazil. The Recife-Dakar section will be completed by January 1982 for subsequent connection with the Dakar-Portugal section. Once the two sections are connected, the use of the telecommunications circuits should start up in August 1982.

The installation of the submarine cable began at 0730 hours yesterday and ended at about 1030 hours after the cable was hauled to the beach by a tugboat and onto the sand by tractors up to an EMBRATEL [Brazilian Telecommunications Company] unit on the Boa Viagem beach where the Bracan submarine cable is also installed and has served to connect Brazil with Europe via the Canary Islands since 1973.

Brazil is the major shareholder of the international consortium established to install the Atlantis system, with 28.6 percent of the $250 million--about 25 billion cruzeiros--invested in the operation; other participants are France, Italy, West Germany, the United Kingdom, Portugal, Switzerland, Senegal, Ivory Coast and Argentina.

The Atlantis cable is divided into two sections: one from Brazil to Senegal (Recife-Dakar) extending over a distance of 3,430 km and the other from Senegal to Portugal (Dakar-Cabo) measuring 2,930 km. According to EMBRATEL, which coordinated the installation of the cable yesterday, "the importance of the Atlantis sytem for Brazil's international communications is evidenced by its need to increase the traffic capacity between Brazil and Europe, since there is a growing need for telecommunications services to the European countries.

8568
CSO: 5500/2008

SATELLITE TRACKING ANTENNA FIELD TESTS INITIATED IN CAMPINAS

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 29 Sep 81 p 16

[Text] Campinas--Communications Minister Haroldo Correia de Mattos said yesterday at the Research and Development Center of TELEBRAS [Brazilian Telecommunications, Inc] in Campinas that "Brazil is now going through the principal phase of its technological development with the nationalization of equipment and components." The minister was in Campinas taking part in the field testing of the most advanced system of pickup and retransmission developed in the country, the tracking antenna of 6-meter satellites, the Ansat-6, built experimentally at the Aerospace Park of Sao Jose dos Caompos by AVIBRAS [Brazilian Aviation, Inc.].

According to TELEBRAS research and development technicians, even on the highest level, by next year about 60 antennas are to be installed on Brazilian territory, making it possible to receive microwave signals from satellites with prefection, even in distant cities. The response to this new equipment is expected to be great, principally because it costs 20 times less than conventional antennas with a parabola of 10 meters. "It is an important product of the TELEBRAS research center," the minister commented, "principally now with the Brazilian communications satellite program."

The minister confirmed the date of March 1985 for the operation of the Brazilian domestic satellite which will cover the entire national territory with excellent quality, according to the technicians. Until now, five groups are interested in setting up the satellite, according to the minister: two U.S., two French and one Canadian.

"First we shall make a study of the transaction from a business standpoint. what the interested parties can offer us and what we can offer. I believe the satellite will cost us about $100 million--about 10 billion cruzeiros," he said.

In speaking to experts in this sector, Correia de Mattos said that the country's technological development has passed through three distinct phases: "The first was the import of highly sophisticated equipment. The second was local manufacture of that equipment. The third was nationalization which, although not providing complete independence, saved us considerable money."

8568
CSO: 5500/2008

BRIEFS

TRACKING ANTENNAS FOR COLOMBIA--The Colombian Government is interested in purchasing an unspecified number of communications satellite tracking antennas which have been developed by the Avibras Aerospace Industries. After 7 years of research, this enterprise has managed to increase the precision of its antennas to such an extent that they can be set up in the Amazon where several of these units are already operating. The best model is the Ansat-10, which costs $140,000. It is being used by Embratel, which has already set up 25 of these units throughout Brazilian territory. [Sao Paulo O ESTADO DE SAO PAULO in Portuguese 27 Sep 81 p 30 PY]

TV SATELLITE SYSTEM--A contract was signed today in Sao Paulo between Embratel [Brazilian Telecommunications Company] and the Sao Paulo Bandeirantes Network. Labor Minister Murilo Macedo presided over the signing of a contract between Embratel and the Bandeirantes Television Network for the continuous use of the channels of Intelsat IV satellite, which will allow the integration in a national network of the 23 stations affiliated to the Bandeirantes Television Network beginning the second half of 1982. [Brasilia Domestic Service in Portuguese 2200 GMT 9 Oct 81 PY]

FRENCH RADARS IN 1982--Brasilia--Jacques Calvet, president of the Bank of Paris, said yesterday that France is already producing the radars purchased by the Ministry of Aeronautics to strengthen and improve the flight control system. According to Calvet, the radars are to arrive in 1982, at least in part, to make possible their installation in accordance with the Aeronautics Ministry's plan. Upon being received by Aeronautics Minister Brig Delio Jardim de Mattos, the Bank of Paris president said that "the Brazilian economy should be projected over the next 20 years, displaying optimism and confidence in Brazil's current situation despite difficulties it is presently experiencing, since difficulties also occur in France, Germany and the United States." [Text] [Rio de Janeiro O GLOBO in Portuguese 23 Sep 81 p 17] 8568

CSO: 5500/2008

BRIEFS

'RADIO UNIDAD' OPENS IN USULUTAN--Completely sure that the people will be victorious, Radio Venceremos, official mouthpiece of the FMLN, initiates this broadcast by greeting Usulutan Department, its people, revolutionary army and militia. We greet Radio Unidad. Yesterday, at 1500, a new FMLN radio station began its broadcasts of freedom from (Tres Calles), Usulutan Department. From our guerrilla camp, we send greetings of solidarity to the companeros who have built this new tool of the people to break the barrier of silence and death that has existed for 50 years. We greet Radio Unidad, which is broadcasting twice a week, on Thursdays and Sundays, to the people of (Tres Calles), Usulutan. Forward, companeros: Welcome to the ideological battle against the dictatorship: the moment when the skies of El Salvador will carry only the radio waves of revolutionary truth is near. When this happens, Radio Nacional will remain only a curiosity in the museum of the revolution we will build. Radio Unidad will be broadcasting on Thursdays and Sundays from 1500 to 1600, from Usulutan, on the first band [as heard]. The broadcasts will be directed to the population in that war front. [Text] [PA071651 (Clandestine) Radio Venceremos in Spanish to El Salvador 1200 GMT 7 Oct 81]

CSO: 5500/2021

BRIEFS

COMMUNICATIONS DIRECTOR FROM JAPAN--Upon his return from Japan, Miguel Alva Orlandini, director of the Social Communications Department, has stated that Japan is interested in helping Peru improve its telecommunications system and that by the end of the year the Japanese will submit a draft project in this regard. [Lima Domestic Service in Spanish 1200 GMT 1 Oct 81 PY]

CSO: 5500/2017

BRIEFS

TV RELAY STATION INSTALLED--According to a central news unit report from Mahabad, by the continuous efforts of a technical group dispatched by the Voice and Vision of the Islamic Republic of Iran, the installation of the new 10-watt [as heard] television relay station has been completed in Mahabad and this morning it was visited by the governor, the commander of the guards corps, the manager of the television center and representative of the Mahabad garrison and also all the officials of the revolutionary institutions of this city. With the installation of this relay station the inhabitants of Mahabad and nearby villages up to a radius of 50 km will be able to watch the programs of the national network of the vision of the Islamic Republic of Iran on three television channels. [Text] [LD181244 Tehran Domestic Service in Persian 1030 GMT 18 Oct 81]

SARAVAN RADIO STARTS OPERATING--According to a central news unit report, thanks to cooperation from the governor's office of the city of Saravan and thanks to round-the clock efforts by our brothers from the repair and maintenance unit of radio transmitters of the Voice and Vision of the Islamic Republic of Iran, beginning from tomorrow morning, coinciding with the auspicious 'Id-e Ghadir-e Khom, the radio transmitter of the city of Saravan will begin operating with a power output of 1 kilowatt and at a frequency of 1584kcs. The radio transmitter of the city of Saravan will boost up on the MN waveband [as heard] the programs of the Voice of the Islamic Republic of Iran from 0600 through 0900 and from 1300 through 2000 daily. [Text] [LD161242 Tehran Domestic Service in Persian 1030 GMT 16 Oct 81]

CSO: 5500/5304

BRIEFS

TELECOMMUNICATIONS NETWORK--The LIPTAKO-GOURMA authority has solicited bids for the construction of a telecommunications network financed by the African Development Bank (ADB) and the Nigerian Trust Fund (NTF). The components of the network are the following: (1) telecommunications lines using microwave links to channel telephone communications and television among Upper Volta, Mali and Niger, and related energy equipment; (2) automatic switching equipment for 8 towns in Upper Volta (1,900 lines), 5 towns in Mali (1,100 lines) and 6 towns in Niger (1,900 lines), and related energy equipment; (3) aerial and underground telephone networks for 9 towns in Upper Volta, 5 towns in Mali and 5 towns in Niger; and (4) telephone stations in Upper Volta (2,500), Mali (1,400), and Niger (2,500). Each component is divided into three sections, each corresponding to one of the nations. Bids can be made on all or a part of the components of the network and all or a part of the section. [Excerpt] [Bamako L'ESSOR in French 11 Sep 81 p 2] 5157

CSO: 5500/5078

TEXT OF COMMUNIQUE ON MASS MEDIA COOPERATION

Mogadishu HEEGAN in English 25 Sep 81 p 3

[Text]

At the invitation of Dr. Mohameed Adan Sheikh, Minister of information and National Guidance of the Somali Democratic Republic, Hon. Peter Oloo Aringa, Minister of information and Broadcasting of the Republic of Kenya paid a visit to Somalia from 13th September, 1981.

The visit was a direct result of the talks recently held in Nairobi between the President of Kenya, H.E. Daniel arap Moi, and the President of Somalia, Jaalle Mohamed Siad Barre. The two leaders had decided that their countries should endeavour to promote good neighbourliness and friendly relations between their sister neighbouring countries for the mutual benefit of their peoples.

Inspired by their leader's wise decision, the two Ministers held talks at the People Hall in Mogadishu to exemine initial concrate steps of cooperation in the field of mass-media, in the discussions, which were held in a brotherly and warm spirit.

The two sides stressing the importance of the role played by the mass media in promoting understanding and good relations between the two peoples and desirous of utilising the full potential of mass-media in that respect, decided to undertake the following cooperative endeavour:

1. **Radio and T.V. Services**:-

Exchange of program on cultural and social fields and other

related topics of interest to both sides;

2. **News Agencies:-**

Exchange of news photos between the Kenya News Agency (KNA) and the Somali National News Agency (SONNA);

3. Press and Publications:-

Exchange of feature articles, and other written materials for the enlightenment of their peoples;

4. Film and Visual Aides:-

Exchange of films and cooperation in the fields of film production, co-production and distribution;

5 Theatre:

Exchange of tours by respective national artist and theatre groups;

6. **Coopertion of journalist associations:**

Encourage the cooperation between the two journalist associations of Kenya and Somalia with a view to promoting cooperation between the two countries;

7. Professional advancement:

Exchange of technical know how and experiences, secondment of professional personal. and untilisation of the existing training institutions for their mutual benefits.

— Areas of cooperation in the field of labour were also explored.

Implementation.

For the purpose of practical implementation of the above objectives the two sides agreed to initiate exchange of visits at Ministerial, administrative and professional levels.

Jaalle Mohamed Siad Barre, President of the Somali Dmocratic Republic, warmly received the visting Kenyan Minister and his delegation.

The delegation made visits to Afgoi, Shalambot, Genale and Jowhar where they were greatly impressed by the efforts of the Somali Democratic Republic in making maximum use of her manpower, agricultural and water resources. Visits

were also made to the historical town of Merca and the Jalalaqsi refugee camp.

At the end of the visit, Hon Aringo expressed, on behalf of his delegation, his thanks and appreciation at the hospitality extended by Dr. Mohamed Adan Sheikh and the warm and friendly manner they weer received everwhere. The visting Minister extended an invitation to his host to visit Kenya at a date to be mutually agreed upon. The invitation was happily accepted.

CSO: 5500/5000

BRIEFS

INTERNATIONAL TELEPHONE LINK--Zaire will undergo a real revolution in telecommunications services with the commissioning of a system of automatic telephone links between the main cities in the country and foreign points, toward the end of 1982. Discussions in this connection are underway between the executive council and certain of Zaire's partners, mainly the kingdom of Belgium, the PTT [Postal Telephone and Telegraph Department] reports, involving a study of the technical aspects and financing of the project. The introduction of this new automatic telephone system reflects the desire of the executive council to make the major Zaire satellite telecommunications network [REZATELSAT] profitable, and above all to improve the quality of services provided to an ever larger and more demanding clientele. Unlike the manual system currently in use, the automatic telephone system offers the advantage of being instantaneous and not requiring the services of an operator. It makes it possible to establish the exact length of calls, which will eliminate the cheating and the laxity noted in the billing of certain customers. [Text] [Kinshasa ELIMA in French 29-30 Aug 81 p 1] 5157

CSO: 5500/5079

ALL-AFRICA SATELLITE SYSTEM PLANNED

Salisbury THE HERALD in English 21 Oct 81 p 11

[Text]

BY the end of the decade the Pan-African Documentation and Information System (PADIS) should be in full operation with all African countries linked to a specially designed satellite.

This week delegates, both planning officials and information scientists, from all participating countries are meeting in Salisbury to discuss the project and the next phases of implementation.

But the planned system of computers, satellites, ground stations and services will cost almost $150 million, at today's prices.

It is worth it?

Making the keynote address to the conference yesterday, the PADIS director, Dr Jean Quirino-Lanhounmey, questioned whether the money should not be invested in hospitals, roads, schools, agriculture and other areas of direct benefit to the people of Africa.

The history of development planning in post-colonial Africa showed that the almost total lack of documentation and information on the results of the planning had delayed development of the continent.

"The huge amounts invested in the economic and social development of Africa could have yielded better results if the investment had been made in a suitable and viable documentary environment.

"In the last two decades the economic and social situation on the continent has continually deteriorated, and in relation to the industrialised world, Africa has fallen further behind."

So new methods had to be adopted and the main defect — the lack of documentation and information banks — had to be rectified.

Such services were not a priority in development; they were, in fact, needed before development planning could take place effectively.

Every effort had to be made at all levels, from continental to national, to accept the PADIS standards, and set up the data bases designed to meet the needs of African users, Dr Quirino-Lanhounmey said.

The first phase of PADIS should be complete by the end of this year.

A co-ordination office is currently being established in Addis Ababa, the headquarters of the United Nations Economic Commission for Africa, a computer system installed, indexing standards drawn up, and staff trained. A telecommunication link will be set up with the European system.

In the second phase, due to end in 1984, the data bank will come into use covering many sectors such as transport, energy, education; more staff will be trained; computers will be installed in regional centres and a satellite link planned.

The national links will be designed during this phase and a computer centre, of similar size to the one for Europe, will be installed.

In the third phase, taking the project to completion by the end of 1989, all African countries, numbering about 50, will be brought on to the system's full network.

In his address Dr Quirino-Lanhounmey referred to several competing systems of indexing material worked out in the world, and said PADIS was being set up in such a way as to avoid this professional infighting by processing all available information, no matter how it was presented.

The system would also process and present information in a form usable by the people who needed it at national and institutional levels in Africa.

In his speech on Monday the United Nations under-secretary-general and executive secretary of the Economic Commission for Africa, Professor Adebayo Adedeji, called on all African governments to take the necessary steps so they would be ready for an integrated information system.

National plans had to make provision for PADIS, national co-ordination bodies set up, legislation passed to establish and develop information and documentation services, and staff trained among other steps.

PADIS would be linked with other regional and continental systems giving African states vast information resources, and making Africa an effective participant in the "information age".

CSO: 5500/5612

GOVERNMENT GOAL TO EXPAND RADIO, TV REPORTED

Salisbury THE HERALD in English 17 Oct 81 p 4

[Text]

THE Government's aim was to have radio and television broadcasts which would reach every part of Zimbabwe "so that the entire country and our entire population can tune in to our services", the Minister of Information and Tourism, Dr Nathan Shamuyarira, said.

Replying to points raised during the debate on his ministry's vote, Dr Shamuyarira said that at present Zimbabwe's broadcasts did not reach every part of the country and that some people, especially those living in the border areas, were forced to tune in to the services of neighbouring countries.

The minister said part of the $4 906 000 earmarked for the Zimbabwe Broadcasting Corporation (ZBC) would be used to buy equipment for the organisation with the aim of providing a nation-wide network in mind.

He said that there was also a "great need to update and improve" the equipment at the country's broadcasting stations in Salisbury and Bulawayo.

At the same time that this new equipment was being introduced, he said, the opportunity was being taken to introduce equipment for colour television.

"We are moving from black and white to colour television," he said, adding that in another three or four years parts for black and white TV would no longer be available, hence Zimbabwe had to prepare for the change.

He explained that of the total money earmarked for the ZBC, $4 406 000 would come from aid funds.

Commenting on the $400 000 grant to the Zimbabwe Inter-Africa News Agency (Ziana) the minister said the money was to enable Ziana to get established.

He told the House that in the past news coming from outside Zimbabwe via the international news agencies was routed through the South African Press Association, where it was edited before being sent to Salisbury.

Ziana had been established to avoid this, he said.

CSO: 5500/5612

BRIEFS

NEW TELEX LINK--Bulawayo--A second public telex office will be opened by the Posts and Telecommunications Corporation in Bulawayo in the main post office building on October 19 a PTC spokesman announced yesterday. The office will provide a worldwide telex service to the public and business and industrial concerns which do not have telex facilities, the spokesman said. [Text] [Salisbury THE HERALD in English 16 Oct 81 p 4]

CSO: 5500/5611

BRIEFS

ARMENIAN TV RELAY STATION--A new state television relay station was put into operation recently in the Azizbekov district of the Armenian SSR. The new relay station will enable people living in the mountainous areas to view television broadcasts. The relay station will transmit in color and in black and white. [Text] [GF111623 Yerevan International Service in Armenian 1900 GMT 10 Oct 81]

CSO: 5500/2016

NORWAY LOOKS AT POSSIBLE ROLE IN SWEDEN'S TELE-X

Oslo AFTENPOSTEN in Norwegian 8 Oct 81 p 31

[Article by Knut Lovstuhagen]

[Text] Norway has responded positively to a Swedish invitation to take part in the definition phase of the satellite project Tele-X. The work is to be completed within a year and will form the basis for future industrial policy investment in this satellite communications system for business life. On the Norwegian side Elektrisk Bureau, Inc. will be the primary industrial partner. It is estimated that in the Nordic region alone there is a billion-kroner market for this type of telecommunications.

It was at the government conference last Monday that the Industrial Affairs Ministry received the green light to accept the invitation on Norwegian participation in Tele-X. Even though a definition phase is all that is now involved few doubt that this is a preliminary to an extensive Swedish-Norwegian industrial cooperation. As early as next week Elektrisk Bureau--along with L.M. Ericksson in Sweden--will get going on clarifying what kind of equipment will be involved in the communications part of the project and which systems components it would be natural for Norwegian industry to take care of.

"Participation in Tele-X will open up many big opportunities for Elektrisk Bureau," technical director Ove Aanensen told AFTENPOSTEN. "Tele-X is an experiment that will provide satellite communications for businesses and institutions in addition to providing opportunities for experimenting with satellite television. But we are primarily interested in the needs of businesses and Elektrisk Bureau will concentrate on systems needed to transmit data and sound communications via satellite."

The Norwegian firm is Europe's biggest supplier today of so-called ship-ground stations--small satellite terminals for ships--and more than 100 sets have been delivered so far. Firms that want to use satellite communications will also need small terminals in order to send and receive data and sound and EB [Elektrisk Bureau] intends to go ashore with its ship-ground stations.

"In the United States IBM, Aethna and Comsat have joined forces to establish their Satellite Business System, SBS. The French are working on a similar

project, Telecom-1 which will meet business needs for satellite communications in central Europe. Tele-X will be the Nordic region's response to these systems and trend analyses indicate there will be a billion-kroner market in the Nordic lands. In addition there will be exports," said Aanensen who pointed out that satellite communication will be an efficient aid in connection with the electronic offices the outlines of which already seem to be shaping up.

According to Aanensen EB will try to introduce close cooperation with Norwegian research institutions in the definition phase now starting. Other Norwegian industries will also be involved as the project develops. The first thing will be to work out systems for the communications side of Tele-X and find out which system components would be suitable for development by Norwegian industry. This work will be done in close contact with L.M. Ericksson which with Saab-Scania is the Swedish industrial firm with major responsibility for the project.

On the Norwegian side between 5 and 10 million kroner will be invested in the definition phase. The main project leading up to the launching of Tele-X in 1986 will call for a Norwegian investment in the 100 million kroner class.

"The most important thing about the work we are now entering into is to get the price of the satellite terminals down to a level that will make them attractive to business, including small and medium-size firms," Aanensen said. "This means extended use of very complex high technology. Elektrisk Bureau is investing in Tele-X because satellite communications are a rapidly-growing field. As a communications firm we cannot let this field go by."

6578
CSO: 5500/2014

NORWAY'S INDUSTRY MINISTER DISCUSSES VENTURES WITH SWEDEN

Oslo AFTENPOSTEN in Norwegian 8 Oct 81 p 31

[Text] "The technology represented by Tele-X is something most of us are convinced will come--regardless of what we may decide to do in this part of the world. If we want to be part of this technology the train will be pulling out soon. We are taking part in the definition phase of Tele-X to clarify what this project will mean in terms of opportunities and challenges and what will be of interest for Norwegian industry and for Norwegian consumers in particular," Industrial Affairs Minister Finn Kristensen told AFTENPOSTEN.

Cabinet minister Kristensen pointed out that there has been some discussion for a while now concerning Tele-X in relation to the broadcasting satellite project, Nordsat. The Norwegians have constantly stressed getting in on the development of the Nordic television satellite but today we must face the fact that it will be some time before a Nordsat is up in the sky.

"Tele-X could be a limited alternative to Nordsat, since the satellite has the built-in capability of covering all the Nordic channel needs. But that is something we must take a stand on later. In this round we are concerned with defining various aspects of a project intended primarily to cover business communications needs. Tele-X will experiment with data communications via cheap ground stations, wave dissemination experiments will be conducted and mobile service tests will be carried out. The assessment of Norwegian industry is that Tele-X is an interesting project technically and we are now stressing participation in the definition phase begun by the Swedes. When this is concluded we will decide whether and on what basis we will involve ourselves in realization of the project."

The Swedes have also invited the other Nordic lands to participate in work on Tele-X and Kristensen said that others besides Norway and Sweden consider it in their interest to cooperate. He predicted that both the Norwegian Technical Science Research Council and the Telecommunications Agency would play an important role in the work of clarifying whether Norway should take part in the project beyond the definition phase. It should also be a goal to involve as much of Norwegian industry as possible. It is estimated that carrying out Tele-X will cost around 800 million Swedish kronor. The Industrial Affairs Ministry appropriated 6 million for the definition phase to be concluded within a year.

6578
CSO: 5500/2014

PAPER EXAMINES SWEDISH, FINNISH STANDS ON NORDSAT PROPOSAL

Helsinki HELSINGIN SANOMAT in Finnish 30 Sep 81 p 2

[Editorial: "Finland's Nordsat Proposal: Whiffs of Censorial Spirit"]

[Text] Finnish and Swedish stands are coming closer regarding the means of Nordsat satellite cooperation. The Nordic conference working on the enterprise has been given a message from the Finnish government, proposing that the feasibility of one "edited television channel" should be investigated soon. The Swedes earlier made an offer of a truncated alternative to the full-service Nordsat, according to which a limited number of television channels, possibly only one, would be available for the Nordic countries.

In effect, the request by Finland to study this possibility means that we have accepted the principle of the Swedish proposal. The satellite model offered by the Swedes would primarily serve the needs of industry and communications, but would also carry the possibility of limited transmission of television programs.

However, this "edited alternative" is basically not a very rational solution. It would offer nothing more than what is at the moment available to the Nordic broadcasting companies for exchange of programs. A somewhat greater selection of programs would be available, but actually even the present system allows for this. The real question is whether we have the will to widen the policy of cultural cooperation--the availability of television channels and transmission time is not the actual stumbling block.

The central idea behind the original Nordsat plan was that it would enable each Nordic country to watch the others' direct television broadcasts. The advantages of this system would have been an increase in both the timeliness and variety of Nordic information exchange.

The system of one edited channel would not offer these advantages, or at least they would be of much less significance. As far as the programming policy is concerned, one Nordic television channel would not be a particularly significant innovation. The Finnish "proposal" of investigating the possibility of one channel is not as much a sign of will to compromise, as it is a sign of fostering a certain amount of censorial spirit. "The edited alternative" would be a censored channel.

It has now been demonstrated by the Finnish government that the proposal reflects an attempt to duck blame in case the satellite venture completely miscarries. This kind of hand-washing is however unnecessary at this point, because only a stump survives of the original Nordsat plan. Finland cannot deny partial responsibility for this development.

However, television programming is only one aspect of the satellite debate. The venture needs to be investigated also from the point of view of industrial and technological development. There is no doubt that a common television and communication satellite offers an opportunity to develop space technology in the Nordic countries. This opportunity must not be underestimated as the other European countries are already far advanced in developing their own communications systems.

9571
CSO: 5500/2009

TELETEL 3V, VIDEOTEXT CONSUMER DEVELOPMENTS DETAILED

Paris REVUE FRANCAISE DES TELECOMMUNICATIONS in French Jul-Aug 81 pp 22-31

> [Text] Please tell me which administration entrance exams are open to people with a baccalaureate degree in classical literature? Please reserve three seats to Saint-Flour on the day before Easter weekend. Please reserve a tennis court for Sunday morning. I would like to transfer 1,500 F from my checking account to my savings account.
>
> All these services, and many others, could be rendered by Teletel, a system which makes use of a combination of telephone and TV set to allow an individual to communicate with automatic services. Two thousand five hundred homes in the region of Versailles - Velzy - Val-de-Bievre will be used as an experiment over the next 18 months.

Good morning Teletel! The greeting from the Teletel Information Center at Velizy (CITV) appears on the family screen. For the Dupin family, this is a big first. One of the homes among many others in this southwest suburb of Paris (140,000 inhabitants in the five townships included in the test), they have learned through information campaigns in the media that a strange experiment was being planned in their area. Distrustful at first, then curious, they have finally joined together with 7,600 volunteer homes to see what the experiment could bring them. The Teletel team then proceeded to select people based on a scientific mix taking into account profession, cultural level, average age, number of family members, type of housing, and other criteria. The Dupins were lucky to be selected in the sample.

PTT [Post Telephone and Telegraph] employees then came with the terminal: a kind of flat metal box they connected to the phone on one side and to the TV set on the other. Mrs Dupin then only had to pull out of the box a small wireless control keyboard which she used to dial the number of CITV. The center first requested the calling terminal ID then, after having been satisfied with the answer, transmitted a greeting message. Using the user's guide, Mrs Dupin can then call the research service directly. She hesitates a while: order or reservation, banking transaction, local information or administrative guide. The range of Teletel possibilities is wide and the initiative of creating new services is up to the organizations owning the information. About 170 companies have already indicated an interest in participating, to which can be added administrative services and 200 local groups. Alone, or with the help of specialists, they have created services they are trying

to make as attractive as possible. Domestic Data Processing. One could almost say "domesticated data processing."

Where Telephone and Television Meet

In order to "domesticate" a computer, one only has to teach it a dialogue procedure that is easy for the user, and connect it to a telephone network. Low cost terminal equipment is also necessary. The result is home-use data processing. An initial attempt along these lines was made in 1971: the CNET (National Center for Telecommunications Studies) began studying the use of the touch-tone telephone as a data processing keyboard in an application where the computer responded by making up sentences from recorded words. However, the principle of audio response could not be used to interrogate data banks, as explained Mr Christian Carrouge, an engineer at the CNET. Spoken translation of written texts could not be automated and data processing centers would have to be totally redesigned. It was therefore necessary to resort to visual techniques, using readily available means. It was then decided to use TV sets, using a terminal (named tictac) providing an interface with the network and processing video signals.

Meanwhile, research work being done in parallel by TV specialists in the UK (Viewdata system) and in France at the CCETT (Joint Center for the Study of Television and Telecommunications) in Rennes started being known. Their basic objectives were very different from those of Telecommunications which was working on a query system using Tictac. The problem concerned broadcasting using dead times in television channels (for instance the raster return time when the electronic beam is returning to the top of the screen) to transmit pages of information among which the user could make a selection. These are therefore two complementary approaches which converge, in France, into the definition of a system (Antiope) common to the broadcasting system developed by Telediffusion de France and the interactive system developed by Telecommunications.

The latter system, named Teletel, features two major improvements over the ancestor Tictac. First of all, the telephone keyboard has been replaced by a more complete alphanumeric keyboard (letters and numbers) similar to that of a typewriter plus a few function keys. Thus (as opposed to the British system Prestel which is numeric only), the user can for instance transmit his name to execute a command, or type a text to be transferred through the same channel to a "mailbox" in the computer. Secondly, while Tictac only provided a few lines of text, Teletel provides colored graphics which complement and lighten the text. This precaution is necessary, because experience shows that the human eye tires rapidly while reading a screen, and that a screen overfilled with characters becomes rapidly unreadable.

Starting in 1975, numerous market studies confirmed that videotex (terminology adopted by CCITT [International Telegraph and Telephone Consulting Committee] to designate this type of system) corresponds to a real need by individuals and corporations. The possibilities are worth trying and a full-size experiment was therefore deemed necessary. On 30 Nov 1978, the French Government decided to attempt it in a limited area center around Velizy. The responsibility for the experiment was given to the DGT (Telecommunications Service) in cooperation with all involved parties: administration, local communities, and future users. A team was set up to address the many technical problems as well as marketing, vendor search, advertising, and coordination problems.

On 2 Jan 1981, Teletel 3V entered the start-up phase with the inauguration of the first stage of the Velizy center (CITV). User connection began in March, and about 1000 installations were completed in July. All users will be connected before October.

Connecting Users to Suppliers

When Mrs Dupin dialed the CITV number on her keyboard, the call was forwarded on the switched telephone network to one of three "mini-6" computers, each of which can handle 100 subscribers simultaneously. After sending the welcoming message, and perhaps personal messages which may have been deposited in the "mail-box," the system only has to connect to the required service (in this case a travel agency). But first, she decides to interrogate the bank, under the protection of a personal code, in order to get a statement of her account. The request gets relayed to the CITV switching center, which consists of two "Datanet 7103's." From there, the request is relayed to the bank computer, either through leased lines if the distance is not too great, or on the Transpac network (trade name of the French packet switching network). The switching center also transmits to the Center's accounting computer (also a Mini-6) data required for statistical purposes and billing: a base .50 F charge for line use, plus the cost charged by the supplier of the required information (free in the case of the bank). After being reassured on the state of her finances, Mrs Dupin calls the travel agency. In this case, there is no request for a personal file search, the computer only transmits fixed "pages" of information concerning the vacation spots available. The latter service can be rendered by CITV itself: the pages can be recorded on the answering Mini-6, with the setting up and updating of the file being done through another Mini-6 which is also used as a back-up to the accounting computer in case of failure.

In fact, this support function of the consultation services is not part of the specific functions of the Teletel center. In the 3V experiment, the objective is to assist small suppliers of information in taking part while waiting for the creation of external "servers" capable of handling their need. In the French concept of Videotex, the Telecommunications Department will only fulfill a transmission and switching function, which is their traditional mission. The direction is toward a completely decentralized system based upon about 100 access ports accessible through the switched network, and connecting subscribers through Transpac to selected servers. This structure is in contrast with that used in the UK (where the only accessible data is that provided by a few large servers), or the intermediate solution used in Germany which allows any server, large or small, entire freedom to set up and manage its operation: why not, in the future, personal computers users of Teletel?

13,000 F To Be a Server

Will the creation of a videotex service one day be within the reach of a "freelancer"? At least one person already tried: Mr M. Froger, an optician in Versailles and ex-business manager of a distribution company who does not hesitate to speak in terms of "marketing policy," or "public image." He discovered the Teletel project 2 years ago and after inquiring found that the experimentation area corresponded to his type of clientele and that the creation of a videotex "magazine was not excessively costly for him. He stated that: "in 1981 my publicity budget is around 130,000 F, and the Teletel part of it, including the design of screens,

amounts to only one-tenth." He added: "Each support has its own interest because it does not reach exactly the same persons."

But by its very nature, Teletel cannot be limited to publicity in specific areas and fits well within a general strategy of consumer information. In this spirit the optician mentioned above designed, in association with a telecommunications service company, a 25-screen "magazine" concerning area hospital services (including consulting schedules), eye-doctor services (for each neighborhood), and a mini-encyclopedia of vision problems and possible corrections. The 25 screens cost him 25 hours of work. "The most difficult for me," he says laughing, "was to understand the technical terms in the forms to fill out for the subscription."

But can such individual attempts be successful against the giant programs of big companies who can spend months in research and considerable investments? We hope so. According to the Teletel team, videotex is a media which can be used even by people with a modest budget and "two well designed pages have more impact than 10 which are difficult to peruse."

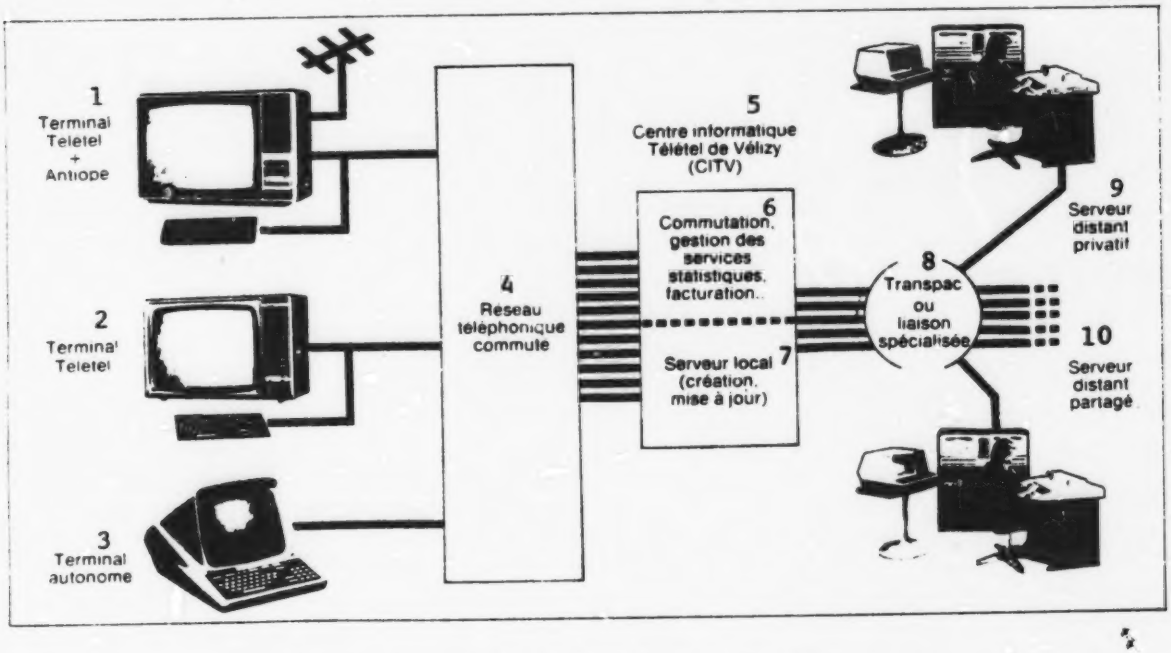


Figure 1. Simplified schematic of Teletel 3V

1. Teletel terminal + Antiope
2. Teletel terminal
3. Standalone terminal
4. Switched telephone network
5. Velizy Teletel Computing center (CITV)
6. Switching, management, accounting
7. Local server (creation, update)
8. Transpac or specialized link
9. Remote private server
10. Remote shared server

Choose What to Say

What does the press think? Three daily syndicates have teamed up into an Economic Interest Group (GIE) to become initiated to Teletel: Although they are asking questions about the possible impact of teleprocessing if it were to be developed without precautions, they do not reject the technical progress and are willing to admit that videotex and hard copy can be complementary.

They have therefore decided to acquire the know-how by publishing a display "newspaper": JEF.

The two newspapermen responsible for publishing this "electronic daily" were able to retrain within a few months by following the golden rules discovered along the way: more rigor in work methods and greater attention to the readers' needs and predictable reactions.

In fact, the creation of a videotex program is the result of mental gymnastics more than pentathlon, because it calls upon extremely varied skills such as data processing, esthetics, psychology, poetry, etc. It is necessary to choose first the type of service or information to be transmitted, considering the characteristics peculiar to the media. In particular, one should take into account the fact that the user who interrogates Teletel is looking for some specific information he needs immediately. This is a major difference with the printed newspaper which is sometimes purchased for the "surprise" value and where, after starting to look for lottery results, the eye often stops on an article which catches its attention, dealing perhaps with new medical discoveries. As pointed out by Pierre Jaume, president of the GIE, the printed press retains its irreplaceable initiation and general culture role.

Another important characteristic of videotex is the requirement to condense information in as few words as possible. For newspapermen trained in the old method (to say what one is going to say, say it is being said, and say it has been said), this imposes a different kind of writing, closer to the memorandum than the encyclopedic article: "experience proves that it is not possible to dedicate more than 2 or 3 screens to any news item (between 40 and 60 newspaper lines); beyond that, the reader becomes tired. Therefore, we limit ourselves to essential information; an embryo of information which prompts the reader to refer to the printed press for complementary details."

After the definition of objectives: "what information? why? for what audience?" the provider of videotex service must define a visual environment and an original writing style so that, in the reader's mind, his magazine cannot be confused with competitors'. It is also necessary to insure that the form be adapted to the content: Abundant and precise information such as employment cannot be presented in the same manner as entertaining information (games, advertisements, etc.) where graphic designs can be used extensively.

Conception of the Dialogue

The third trial the provider of service has to go through can be likened to fencing. The object is to anticipate the user's reactions so that a "conversation" can take

place. At CITV, the dialogues follow a "tree" procedure, starting from the most general concepts ("Do you sometimes eat?") to arrive at detailed descriptions of what is needed ("Do you like couscous with or without chick peas?"). This method, which is simple to implement, has the drawback of becoming tedious after a while, and has been improved by using mnemonic shortcuts. For instance, by typing some mnemonic word such as "Arabrest" it is possible for the user to short-circuit a good bit of the previously described procedure to get directly to the kind of ethnic restaurant for which he is looking.

Another improvement uses special branches which can be used to jump directly from one tree to another without having to go back to the common root. One can thus skip from the restaurant to a movie house without going back to the "Entertainment in Velizy" page.

Thus perfected, the tree structure remains the most obvious procedure for the non-specialist. It guides him step by step through the process and saves him the trouble of referring to the user's guide which can be called using the "Guide" key on the command keyboard. However some providers of services such as the Didot-Bottin (phone book) computer, which is included in the 3V experiment, call upon more sophisticated programs which can provide information by association of key words (for a movie: "First-run" and "comedy"); this multiple-criteria procedure is faster but requires a little training. The direction is probably toward services using a combination of the tree structure together with more complex dialogue methods, so that beginners as well as experts can feel at ease. The immediate difficulty in reaching this goal is related to the present organization of files used in most companies and indexed from a single key word.

But to get back to the tele-newspaper designed by the two newspapermen at JEF. First branch in the tree: the reader can either request the first page headlines, or go to the index of his favorite section. From there, he only has to type the number corresponding to the article he is interested in. Such a simplified procedure would present the risk of leaving the racing fan in complete ignorance of a German measles epidemic threatening his young wife. In order to correct this problem, the designers had the idea of placing newsflashes at the bottom of the pages, showing items covered in other sections along with the mnemonic needed to access it. They also intend to refer the reader to more complete articles published in the regular press. What is, then, the advantage of videotex as compared to the traditional newspaper? According to specialists, it is the number of possible classifications. For instance in their TV listings, they intend to provide a series of "tailored" pages depending upon whether people are interested in children's programs, political debates, etc. The main thrust is: "to progress and anticipate the needs of the user."

The User Will Define the Service

One only has to replace the word "reader" with the word "customer" to discover the reason for the interest businesses in general take in the videotex experiment. The banking community is a good example. If one includes insurance companies, one-fifth of the companies participating in 3V belong to this category; the distribution industry alone is represented in larger numbers. The reason is that they often find it difficult to establish a relationship with their customers. Videotex gives

them the hope of establishing a better contact, at all hours, and at the user's initiative. Another advantage is in the possibility of effecting transfers of funds remotely. For instance, the top French private bank records 42 million operations a month which, in spite of computerization, involve costly paper handling whereas a simple magnetic card reader associated with a Teletel terminal could be used to make bank transfers without risk of fraud (see in our issue number 38: "And tomorrow, electronic money").

While waiting for the development of an all-purpose magnetic card, banks will at first limit their services to operations which do not involve transfers of funds. Thus, the Credit Agricole bank proposes about 10 applications such as bank account balance notification, interest computation, tax determination, etc. All these can be obtained from the home terminal, provided one knows the password.

The most difficult thing is to find a good way to chain successive screens so that they answer the users' expectations. As we have seen, these expectations are not always easy to anticipate within a tree structure: the person requesting a screen concerning home mortgages may be looking for an investment, trying to buy a home, or wishing to have his roof redone. The only way is to anticipate all cases and to ask the user to check the correct answer. Furthermore, it is necessary to design a number of special branches so that, from the home mortgage screen, it may be possible to jump to the "creation of initial deposit" located on another branch. These difficulties, generated by the "single criterion" organization of bank files, do not stop Michel Faurie, who is responsible for the project: "We will be able to modify the file if required, he says. In the long run, it is up to the user to define what he wants. This is very different from conventional data processing."

Striking Graphics Design and Appropriate Text

Some providers of services handle the design and management of their screens themselves, but most sub-contract it to one of the 15 companies specializing in "Advice and Assistance to Teletel Users." The relationship of providers of services to these companies may range from complete withdrawal from the project (giving them the full responsibility for the definition of content, the form of the dialogue, and the screen format), to full involvement: for instance the CEESI (Center for the Study and Experimentation of Information Systems) provides pre-cut and calibrated pages where the only remaining work is to set them up according to the standards established. The correct level of involvement is somewhere between these extremes, in a collaboration at all stages of the design, the providers of service being better aware of the needs of their customers, and consulting companies bringing a better knowledge of videotex.

At the present time, the design of screens proceeds more from craftsmanship than data processing, with tin and chisel being replaced by display terminals. We have met one of these "screen engravers," Dominique Abraham, a graduate of the Beaux Arts school, who came to videotex after a stay in advertising. From the first school, he retained a concern for esthetic qualities, and from his second experience, a sense of the needs of the audience, a desire to deliver an immediately readable message, opposed to the hermetic world that designers often enjoy. Teletel carries this requirement for rigor and transparency to the extreme.

That day, the graphic arts specialist worked on a particularly difficult problem: to draw a videotex picture representing an illustration from the current issue of the "Telecommunications" magazine. He first took from the archives a floppy disk containing the semi-graphic representation of a Teletel terminal. After inserting the diskette into the terminal, the desired picture appeared on the screen. He then started to work on the keyboard: a cursor was moving across the screen as he worked, stopping from time to time on a character to be erased, a line to move, a color to be changed, a sign to insert, etc. Slowly, from a stack of small rectangles, emerged three figures sitting in their living room. A few more strokes and the completed work was translated into digital code in the memory of the second diskette.

Composition: The Brain and the Tool

The creation of a videotex magazine concludes with the generation of this diskette. Through the different steps, we have met with graphics designers, computer specialists, salesmen, and journalists. All worked to create the best possible dialogue, from their own specialized point of view.

Three French manufacturers have started producing tools for videotex composition. In their order of appearance, they are Unitel, FIES, and Telematique. At the beginning, these tools were conceived somewhat like display keyboards, and the first designation of the system (Teletext) as well as its present name (videotex) reflects this historical primacy of the written word. But graphics designers came upon the scene: they discovered the technical limitations of the machine and prodded the manufacturer to improve it. Conversely, each new creation from manufacturers incited graphic designers to improve upon their creative imagination until they reached a new limitation of the tool.

Such a situation is not favorable to mass production: composing terminals are still produced in small numbers and at a high price: around 100,000 F. In these conditions, are we proceeding toward industrial production (which would result in lower prices but would reduce the evolution potential) or toward a dichotomy between "art" videotex and "mass" videotex"? perhaps, in the latter case, will it be necessary to return to the "electronic typewriter" of the earlier days, but capable of handling page formatting and text processing? Or will we build machines to be connected directly to the provider of service's computer to capture information and transform it automatically into screen pages? Why not even a computer system capable of simultaneously creating pages for two separate editions: a paper edition, and a videotex edition? In all of this, what becomes of creativity? Research is proceeding at full speed in this area where the possible application of computer art to videotex is already being discussed. Meanwhile, the range of offerings has been considerably enriched. For instance, we have the "tracing table," or "graphic tablet." From the outside, it looks very much like a writing tablet (see issue No 36 of our magazine); a graphics designer draws directly on the tablet using a stylet, and the tablet computes the x - y coordinates in order to transfer it to the screen. A variation on this system is the light-pen which can be used to draw directly on the screen, as on a blackboard.

There are also television cameras whose image is instantaneously transformed into semi-graphic characters and result in a considerable time saving. Most often, however, the image obtained in this manner is rather rough and constitutes the raw

material that the designer must work with to reach a satisfactory result. The composing keyboard terminal is therefore not about to disappear.

The information has thus been captured and transformed into videotex mode. It must still be transferred into the data bank, either through some telecommunications method, or using a floppy disk which may contain up to 100 screens. A composing terminal can also act as a computer console to create or modify the structure of the data bank or to make updates. It must also be capable of interrogating the data bank in the same manner as a consulting terminal.

The Videotex Industry

As opposed to composing terminals, the price of the users' terminal should go down rapidly if they are mass produced. The possibility to offer low-cost terminals is the key element of the French computer industry export strategy, as Georges Nahon indicated in this magazine (Issue No 38). In particular, the market available to the "electronic yearbook" allows French companies to invest in the production of the components required in this type of device. What about the future? Lower cost modems (they are currently the most expensive part of the terminal); microprocessors which provided added graphic capabilities, such as DRCS (used to create a set of specific characters for each application); not to mention the arrival of flat screens in the near future.

This is why French companies have selected the least restrictive standard. It would be unreasonable to freeze videotex as it is being born, when everything points to a fusion of similar systems all of which, from telecommunications to cablevision, tend to allow men to communicate through electronic means. The enormous teleinformation market will belong to the industry capable of offering the most adapted equipment at the lower price. But let us not be too restrictive: The "videotex industry" includes also data processing consulting firms which provide the serving centers and their programs, maintain them, or manage them. They adapt without too much difficulty to the new requirements: more simultaneous computer accesses, fast response times (after more than 2 seconds, the user becomes impatient), programs that are "transparent" to the user and error-tolerant. On the other hand, teleinformation requires less information storing capability (flight schedules toward Spain rather than the complete bibliography on Mozarabic art), and therefore less hardware. All these characteristics underline the advantages of "french-style" demultiplication of data banks and servers to arrive, here again, at mass production. As pointed out by Yves Rouilly, President of Steria (prime contractor for CITV): "we have attempted to create servers designed in the same industrial concept as terminals, since the increase in the number of providers of services will make individualized production impossible." But "industrial concept" does not necessarily mean "standardization," since companies cannot always be content with standard programs: they will only agree, at first, to invest in Teletel sites if they can be integrated within their own computer system. The implementation of a server will therefore begin with an in-depth discussion with the customer in order to size up his operation and end with the determination of several parameters: size of the data bank, proportion of interactive services, number of branches required for the subscribers and suppliers, etc.

Anti-Partitioning

At the conclusion of this videotex investigation where we met with craftsmen and businessmen, dialogue-oriented men and number-oriented men, a main theme seems to emerge. The very vocabulary of the new media leads us to this theme: teleinformation (telecommunications + computers), "videotex" (image + text), "Teletel" (telephone + television), all are suitcase-words, to use Lewis Caroll's phrase, which symbolize the condensation of different institutions and disciplines, which were partitioned in the past, into a single "packet." Teleinformation gets them all together and de-partitions them.

First of all, anti-partitioning is in the videotex teams where the ad man works hand in hand with the programmer analyst, and the writer with the draftsman; it is also in the providers of services who have to meet the needs of their customers more than ever before, anticipate their needs and their reactions; in the administrations who find an easy way of getting in touch with the user; in the graphics designer who must create a direct, less esoteric language; in computer programmers who can no longer take refuge behind their hermetic vocabulary; and especially in the users. The main objective is to give the user easy access to a high number of services and information which will enable him to avoid going out into tangled traffic and will make his job easier and more efficient by giving him exact knowledge about the services he is interested in: business, schedules, formalities, etc. The time saved becomes available for more fruitful forms of human contact suggested in their programs by more than 200 local associations participating in the 3V experiment. But in the end, will the desire to stay at home be more powerful? All foreign experimentation of similar systems, such as cablevision, shows an increase in community life, of the feeling of being a "citizen" first.

Administrative Proposals

Among the 7,600 candidates to the Teletel 3V experiment, 80 percent cited administrative information among the main centers of interest. It is not necessary to invoke Kafka to recognize the complexity inherent in large institutions: labyrinthine rules and regulations, difficulty of identifying the right person to talk to in the right department, not to mention the difficulty of matching one's schedule with the offices' working hours.

Faced with these difficulties, the information services belonging to the various state services cannot fully answer the needs of the people. This is the reason why CEESI (Center for the Study and Experimentation of Information Systems), through which ministries, local governments, public services, etc., can get together to establish new means of communications with the people was created. Videotex is a part of these means.

CEESI was therefore charged with the responsibility of establish a Teletel program for administrations, under the leadership of the Government General Secretariat. The content (about 15,000 pages) was defined by each of the departments concerned. It will be implemented on the Videotel server of Telesystems and Steria. Three types of services are being proposed:

- General Interest Information.

Current regulations (health protection, school regulations, rights of salaried employees, tax laws, etc.)

Employment offered by the Administration:
Results of product tests carried out by the National Consumer's Institute.

- Services involving data processing:

The INSEF (National Institute of Statistics and Economic Studies) will determine contract indexation based upon available economic indicators.

Message services will use an "electronic mailbox" system:

CIRA's (Interministry Centers of Government Information) will respond to questions concerning current regulations.

Local governments will provide, for instance, information on the status of building permits.

Furthermore, several departments will offer services designed independently from the CEESI:

The National Education Ministry offers learning games;
The transportation Ministry offers weather and road conditions information;
The Postal Service offers to owners of postal checking accounts, an account consultation service and information on postal rates and rules.

Antiope, the French Videotex System

Antiope: under this fake mythological term, which really stands for "Numeric Acquisition and Display of Images Organized as Pages of Written Material," lies the French videotex system, designed by the Joint Center for Television and Telecommunications Studies. The initial objective was, using basic data obtained by the British, to design a system which could be integrated as a module in the general telecommunications services. Therefore, it had to be independent of the means of transmission: radio, telephone, Transpac, etc. The particularities of transmitted videotex (for instance the requirement to synchronize the transmitter and the receiver) were therefore separated from the functions necessary, whatever the circuit used, for visualization and coding.

Coding

The ANTIOPE language is a coding standard which provides the means of transmission of the elements required by the videotex service, such as symbols to be displayed and their visual characteristics, data concerning page formatting, etc. The syntax has been designed to allow the introduction of new utilization procedures at all levels, without impacting the operation of existing receivers. The vocabulary consists of 8-bit bytes, or sequences of bytes conforming to international standards (CCITT recommendation V3 and ISO 2022 standard). The first seven bits are used to

transmit information, whereas the eighth bit is used for parity checking. It is therefore possible to symbolize 128 different characters or functions using a single byte. One of the 128 symbols refers to another code which defines 128 additional characters or functions.

Characters Displayed

The screen is divided into 24 40-character lines. An additional line called "page-header" carries service information. Each character is formed by a dot matrix which can be different according to the type of alphabet.

In its most common version, the ANTIOPE system uses two sets of displayable symbols. The base set selected for France corresponds roughly to a typewriter keyboard; it includes all alphabetic and numeric symbols including punctuation and simple operations used in French.

The second set consists in 64 "semi-graphic" characters. In order to use them, the base rectangle has been subdivided into 6 small rectangles which can be turned on or off. Used in various combinations, they can be used to draw rough pictures.

Display Functions

The visual quality and the content of videotex pages can be enriched using special functions which differ according to the type of character they refer to.

- Functions which are common to all types of characters:

Color: A character and its background may be represented in eight different colors: white, red, green, yellow (green and red), magenta (red and blue), cyan (blue and green), and black.

Flashing: a flashing character is made to appear in its color and the background color alternately.

- Functions reserved for alphanumeric characters and symbols:

Background inversion: The color of a character can be interchanged with that of its background.

Size variations: a character can double in height, width, or both.

- Functions used with semi-graphic characters:

Disjunction: A disjuncted character can be obtained by displaying on the background, only the central part of the six rectangles of which it is made.

Pages With Secrets

It is possible to show only part of a page, the rest remaining masked until the user requests the display.

These procedures represent the French videotex system as used in the 3V experiment. This system conforms with international specifications and its design provides sufficient flexibility to be able to react to technical progress and to allow for modifications, once the various countries have agreed upon a real world-wide standard.

User Terminals

Two types of consultation terminals will be provided to the Velizy users. Three-fourths of them will receive the "base terminal" produced by Thomson-CSF and Matra. Using the home TV set as a display terminal, it consists of a flat box located under the TV and another, independent box, which is located inside the first.

The first piece of this set consists of three parts: the "central unit" which handles binary coding of user commands and transforms the digital signal received from the telephone line into video signals; the modem which transposes the coded information in a frequency range adapted to optimal transmission; in addition, one-half of the terminals will include a printed circuit to decode and select radio-transmitted pages of the ANTIOPE broadcast videotex. The set is powered from normal AC voltage (power consumption is about 30 W) and connects to the TV set either through a UHF coupler at the antenna terminal or on the standard "peritelevision" connector mounted on all French TV sets.

The second box consists in the command keyboard linked to the central unit by infrared. It contains a battery which recharges when the keyboard is stored in its compartment.

The last fourth of the users will receive an integrated terminal including keyboard, display (black and white), and especially the modem. The terminal (produced by Matra or TRT) is identical to that used in the "electronic phone book" experiment and also produced by 2 other manufacturers (Telic and Thomson). This terminal is intended for mass production and is already being offered (1,500 F) for high volume orders. Its price should go down to about 500 F.

The capability of the terminal can be increased by connecting peripheral equipment. In particular, the following are planned:

- A telecopier to obtain hard copy at the terminal;
- A magnetic card reader for banking operations.

6445
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COMMUNICATIONS MINISTER WEIGHS TELECOMMUNICATIONS REFORM

Oslo AFTENPOSTEN in Norwegian 25 Aug 81 p 5

[Article by Liv Hegna: "Minister Bye Hints Freer Position for Telecommunications Agency in Future"]

[Text] When yesterday he debated the monopoly and future of the Telecommunications Agency with Conservative Storting member Astrid Gjertsen, Communications Minister Ronald Bye stated that personally he has come to the conclusion that the Agency should have a freer position as a state enterprise. He said, however, that he would wait for a report from a committee of experts before he took a final position. In Astrid Gjertsen's opinion an increasing number of unfortunate effects would arise if the monopoly form is stubbornly adhered to.

The committee of experts will primarily deal with the Communications Agency's connection with the state budget, and Astrid Gjertsen stressed that her party, the Conservatives, assumes that in the future as well, the Storting will establish the main lines for telecommunications development in this country.

"Development, maintenance, and modernization of a telecommunications network is a long range task, in which many things must fit together. This makes it urgently necessary to have a plan and an overview in decisions as well, said Astrid Gjertsen.

She pointed out that in the public debate, one gains the impression that better telecommunications and more efficient service have primarily been a question of appropriations. "In a comparison with Sweden, we see that we can have a considerably greater number of telephones for smaller appropriations. "Perhaps the use of the money more than the amount is at fault in Norway," said Astrid Gjertsen, going on to say that in reality there is need for a set of other measures in addition to large appropriations. Specifically, she thought an evaluation of the Telecommunications Agency's form of organization was important. In addition, she thought it necessary to liberalize the Agency's monopoly.

"The Conservative Party does not regard the Telecommunications Agency's monopoly on certain services. The question is how this monopoly is to be limited. The future tasks of the Telecommunications Agency should be limited to establishing, maintaining, and operating the telecommunications network."

Gjertsen compared the Agency with an electric power plant: The power plant sees to it that the customer receives electricity, while the customer himself decides how it is to be used.

There should be nothing more complicated and problematical about the customers in the future going to merchants to purchase the type of telephone apparatus or extra equipment they desire and plug it in than that customers can today buy lamps, ranges, refrigerators or TV receivers," said Astrid Gjertsen, who thought it gratifying that a debate on these questions is under way in the Telecommunications Agency.

For his part, Communications Minister Ronald Bye asserted that the possibility that the Norwegian telephone industry might become competitive in certain areas on the international level would to a great degree depend upon the Telecommunication Agency's ability to adjust to the new digital technology.

"At the present time this calls for a number of actions that might have to be undertaken more rapidly than the Telecommunications Agency has prepared for in its long-range plan. The new technology can also make necessary personnel and organizational moves," said Minister Bye. He also agreed that there was reason for the concern, apparent in the Agency's board of directors, concerning the Agency's efficiency and productivity. His basis for this was both the level difference in relation to Sweden, plus a negative trend in the number of telephones per employee found in Norway.

"Both are reasons for concern. The Telecommunications Agency is working to turn this development around, and an improvement is expected for 1981," said Bye, who thought the new technology ought to provide the basis for smaller increases in telephone bills than would otherwise be expected, and that the new technology should be made use of to a greater degree to finance investments.

11,256
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TELECOMMUNICATIONS AGENCY HURT BY PERSONNEL LOSS

Oslo AFTENPOSTEN in Norwegian 25 Aug 81 p 25

[Article by Knut Lovstuhagen: "Personnel Flight Is Costly"]

[Text] The departure of skilled technical personnel has become a very serious problem to the Telecommunications Agency. Many of those who quit were to have worked on preparations for introduction of new technology in the telecommunications network. The Agency can already show that it has been very expensive not to have sufficient personnel for planning. "We are unable to develop the data processing systems rapidly enough to save hundreds of millions of kroner," said staff leader Ole J. Haga of the Telecommunications Directorate at a debate yesterday on society's need for communications in the 1980's.

"Without better pay conditions for the key personnel we depend upon, we have no chance to meet our objectives," said Haga. He pointed out that the loss of personnel forces many leaders to devote much of their time to "putting out fires" to repair the damage done. "We must see to it that it becomes popular once more to work in telecommunications."

The debate, arranged by the Society of Civil Engineers of the Telecommunications Agency, was attended by about 200 persons to listen to the exchange among those central to the debate on telecommunications, such as Communications Minister Ronald Bye, Storting member Astrid Gjertsen, Egil Abrahamsen, chairman of the board of the Telecommunications Agency, General Manager Kjell Holter, Administrator Olaf Stavik, and Consul General Peter Collett. In a follow-up of Haga's contribution to the debate, Svein O. Andreassen, chairman of the Society of Civil Engineers of the Telecommunications Agency, said that it was urgently necessary to introduce a more satisfactory system of advancement and pay in the Agency.

Poor Pay

"About 50 civil engineers of the category the Telecommunications Agency needs are graduated annually from Norwegian institutes of technology. The Agency needs perhaps 30 per year, but the electronics industry alone can absorb all of them. In addition, there is the need of the oil industry and other industries for the same type of personnel. We also know that the Telecommunications Agency offers salaries 35-40 percent lower than those in the private

sector. Where are we to get civil engineers?" asked Andreassen, supplying the answer himself. "By making use of existing personnel, but at the same time offering salaries commensurate with what the private sector offers."

Minister Ronald Bye said that if it would improve recruitment to the Agency, he would not oppose freeing the Telecommunications Agency from the state budget. "A freer position for the Agency--if, for example, it were turned into a state stock company like Statoil--this would perhaps be the right model. However, this question we shall have the opportunity to discuss in detail when the Telecommunications committee has completed its work." Concerning the Telecommunications Agency's monopoly, Bye said that politically he was unable to mobilize strong feelings on the question. On the other hand, he would oppose a softening of the monopoly that would lead to the Agency being responsible for everything on the loss side, while private interests handle the profitable side. And he opposed dissolution of the monopoly where social power positions play a role.

General Manager Kjell Holter described the four main problems facing the Telecommunications Agency: First, productivity development, in which the Agency at the present time experiences an increase of 1.3 percent annually. The goal is 3 percent. About the personnel problem, Holter said that unless the personnel flight comes to an end the Agency is faced with a breakdown. The waiting lists for telephones he described primarily as a problem for politicians, who each year decide how many telephone exchanges and meters of cable the Agency can buy, regardless of how effective the Agency may be. The last problem is poor service and too long delays, a responsibility the Agency must handle alone.

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TECHNICALLY ADVANCED TELEPHONE TO BE INTRODUCED

Oslo AFTENPOSTEN in Norwegian 25 Aug 81 p 9

[Article by Terje Avner: "The Tastafon--A New Generation of Telephones"]

[Text] Next year tens of thousands of Norwegian telephone subscribers will exchange their old telephones for the new "Tastafon." Though it has escaped notice by most people, a new generation of telephones is making its appearance--completely different from those hitherto produced: of elegant design, six different colors, a keyboard instead of a round dial, and with a number of technical options. Today, a so-called pilot series of 30,000 instruments is being produced, of which 3,500 were delivered in Oslo, Drammen, Alesund, and Bergen in June. The telephones are being assembled in Risor.

The new telephone has been named the "Tastafon" [push button phone] the name indicating much of the visual change in the new generation of telephones.

A keyboard, not unlike the one we find in pocket calculators today, replaces the circular dialing disk. The design is elegant: flat and square, with a touch of the 1980's, and different in all ways from the telephone today described only as the 67 Model," produced from 1967 until today.

The Tastafon--named following an internal naming competition in the Telecommunications Administration--is being assembled in EB's [Electric Bureau] plant near Risor. "Here we shall next year produce up to 20,000 Tastafones per month, or between 200,000 and 300,000 annually," says plant manager Fred Schwabe-Hansen. The plant is now busy producing the pilot series of 30,000 instruments ordered by the Telecommunications Administration. These Tastafones are to be tried out in four cities with computerized exchanges: Oslo, Bergan, Drammen, and Alesund. Next year the equipment will be offered to all subscribers.

"But not free of charge like the earlier models," says information chief Christian Bugge Hjort of Telecommunications. "If you have a 67 model you must pay 400 kroner, plus value-added tax, for one of the new telephones. If you have an older model or are a first-time subscriber you get off with 200 kroner, plus value added tax." This indicates that Telecommunications wishes to replace the oldest telephones first.

About 280 employees of Electric Bureau in Risor have assembled about 190,000 of the 67 model annually in recent year. When production on a full scale of the Tastafon begins, newer technology and special equipment will be used, and as a consequence fewer workers will be needed.

"Four main parts are involved in assembly of the new telephone," explains Bjorn Andvig, "the microtelephone with two shells: the microphone and the sound amplifier, the circuit card, which is the very heart of the instrument, and the cables--produced by the Norwegian Electric Cable Factory--and the final assembly with testing of all functions.

The result is a tasyafon minus a lid. Because of the possible color combinations, the covers are installed by Telecommunications itself.

"Everything indicates that the new telephone instrument will be a success," says plant chief Schwabe-Hansen. "We are constantly being called by people who want such equipment. We cannot help them, of course. Everything is handled by the Telecommunications Agency."

A new telephone is not only a matter of a new design. Actually, there will be two types. One so-called decadic, similar to the telephones of today, and one with "tone signaling" says information chief Christian Bugge Hjort of Telecommunications. Without going into detail on how tone signals act at an automated telephone exchange, we shall mention some of the possibilities of such an instrument. It makes relaying of a telephone connection possible. An incoming call to your private number is automatically relayed to another number programmed in advance by the subscriber. Further, often used numbers can be replaced by two-digit numbers when so programmed. Automatic awakening at a certain hour programmed by the subscriber can also be ordered.

The new Tastafones will also improve the office environment. Two different sound frequencies and two different tones will make it easier to determine which telephone is ringing. This is today doubtless a problem in many offices.

Development comes rapidly in telecommunications.

"Even if today one can see a trace of status symbol in being among the first to have the new telephone, many things indicate that within only a decade it will be replaced by a new generation," predicts plant chief Fred Schwabe-Hansen of Electric Bureau.

11,256
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WHOLLY AUTOMATED MOBILE PHONE SYSTEM ADVANCES

Oslo AFTENPOSTEN in Norwegian 8 Oct 81 p 30

[Article by Terje Avner]

[Text] The fight is just starting over a brand new joint Nordic mobile telephone market.

In Norway alone the sale of the new wholly automatic mobile telephones is expected to involve more than 1 billion kroner over the next 4 years. Ten suppliers who have been working with the Telecommunications Directorate on developing the system will find themselves in an acute competitive situation. The battle has already begun in advertising space and on billboards. On 10 November regular operation of the system will begin.

The new Nordic automatic mobile telephone system means in a nutshell that one can call up all over the world from a car without going through an exchange. In the Nordic region one can also be called up directly from any telephone. At the beginning of August test operation of the system started, just in eastern Norway. Some 50 pieces of equipment have been used since then by the Telecommunications Agency and a corresponding number have been used by suppliers.

"The idea of this kind of trial operation is to discover minor irregularities. In this period the system worked very well," chief engineer Kare Gustad of the Telecommunications Directorate told AFTENPOSTEN.

After 3 months of trial operation the system will go into regular operation in eastern Norway on 10 November. After that the system will be expanded in stages until it covers the entire country in 1985. In this space of time the Telecommunications Directorate expects to get about 40,000 new mobile telephone subscribers. The price varies between 20,000 and 28,000 kroner. Taking an average of 25,000 kroner it looks as if there will be 1 billion kroner in sales over this period. In addition will be those of the existing 30,000 subscribers who want to change over to the new system.

Ten suppliers, both Norwegian and foreign, have worked in recent years with the telecommunications authorities to develop the new automatic system. They are: J. M Feiring, Inc. representing AP Radiotelephone (Denmark), Lehmkuhl-SRA, Inc.

representing SRA-Sonab (Sweden), Gustav A. Ring, representing Storno, Inc. (Denmark), Bjorn D. Rostad, representing Mitsubishi (Japan), Salora Norge, Inc., representing Salora (Finland), Ola Tandberg Elektro, representing Motorola (United States), Siemens, Inc. (Norway) and Simonsen Elektro, Inc. (Norway). The Japanese NCE will probably be added to the list.

Several of the brands have already been given model approval and the rest are expected to be approved within a relatively short period of time. Prices vary considerably but that is largely due to different forms of use. Among other things at least one of the suppliers has decided to call his new telephone a car phone instead of a mobile telephone. The reason is that the telephone can only be used when it is hooked up in the car. Other units can be taken along if one chooses to remove the unit from the car.

Incorporated in the new system are such things as adding on conference calls. Other technical refinements have been added by the suppliers themselves without being required to by the Telecommunications Directorate. One will also find some variations in form and design. When it comes to technical quality the authorities set the requirements and specifications and quality differences are not large, AFTENPOSTEN was told.

6578
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BRIEFS

TELECOMMUNICATIONS AGENCY INCREASES PRODUCTIVITY--Developments during the first 6 months of the year show that total productivity in the Telecommunications Agency is increasing. While during the 3-year period 1978-80 there was an annual increase of .8 per cent, the prognosis for 1981 shows an increase of over 4.5 percent. These figures were presented to the Telecommunications board on Monday. Total productivity refers to the relationship between the Telecommunications Agency's production of services, on the one hand and on the other hand, its consumption of resources in the form of capital and labor. The net increase of subscribers will this year be over 4000 more than budgeted and is expected to be above 90,000. This is twice as many as in 1978. The demand for new telephones is greater than ever, and much capital will have to be invested in coming years if the waiting lines for telephones are to be done away with in a reasonable period of time. [Text] [Oslo AFTENPOSTEN in Norwegian 22 Sep 81 p 31] 11,256

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END

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18 November 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 189

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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18 November 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 189

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TROPOSCATTER LINK ESTABLISHED FOR USSR, INDIA

BK031342 Delhi General Overseas Service in English 1010 GMT 3 Nov 81

[Commentary: "New Link Between India and Russia" by N.R. Verma of the All India Radio]

[Excerpts] India and Russia have taken a giant step in history, both in terms of distance and time, by establishing the world's first-ever troposcatter communication link. Troposcatter is the method of utilizing two mountain tops for defracting radio beams sent by ground stations, thus avoiding unforeseen interruptions due to atmospheric disturbances in high altitudes.

The setting up of the new link between the two countries has raised Indo-Soviet relations to new heights in technological collaboration. While inaugurating the new link on Monday last [2 November] Prime Minister Mrs Indira Gandhi rightly pointed out that it is an important milestone in Indo-Soviet economic, scientific and technological cooperation. She said India deeply appreciates the Soviet Union sharing with us its technology for the benefit of both our people. She also congratulated the Soviet engineers and technicians who had jointly worked in achieving this impressive technological feat.

Though the relations between the two countries have grown in the last 3 decades and they are comprehensive today, there was no adequate direct communication link between the two countries. A good part of the communication went through London and Tokyo. It was to remove this anomaly that the two countries decided to establish a troposcatter link during Soviet President Brezhnev's visit to India in 1973. An agreement for establishing the link was signed in 1977 when Soviet Foreign Minister Gromyko visited Delhi.

The tropospheric communication line is a joint Indo-Soviet venture. The Soviet Union supplied the design project and special equipment. The state-owned electronic corporation of India manufactured two sets of big antenna. The receiving and transmitting stations are located at (Samlok) Mountain near Drusanre, the capital of Soviet Tadzhikstan and the village (Sherare Sharif), 23 kilometers from Srinagar, capital of the norhternmost Indian state of Jammu and Kashmir.

There was great need for establishing better communication with the Soviet Union in view of the growing bilateral cooperation. The existing shortwave communication

link between the two countries was not able to meet these requirements in full. Being subject to atmospheric disturbances a shortwave communication link was also not stable and reliable. Therefore, the new link has gone a long way in meeting this need.

The troposcatter link will now provide a reliable round the clock high quality transmission medium for telecommunication services. It will also effectively supplement the route at present available through Intersat global satellite communication system. Another highlight is that it will serve as a strategic diversity medium during the contingencies, such as a planned and unforeseen interruption in the satellite communication system.

The troposcatter link will be utilized not only for telecom traffic between the two countries but also between East Europe and India. In addition, it will carry traffic from Southeast Asia to the Soviet Union and East Europe and thus open up new vistas of cooperation and understanding with all the friendly neighboring countries.

CSO: 5500/2034

BRIEFS

DW, PRC RADIO AGREEMENT--Cologne/Bonn, 4 Nov (DPA)--Deutsche Welle and Beijing Radio intend to exchange journalists. An agreement to this effect was signed today by Klaus Schuetz, director of the Federal Republic's Foreign Broadcasting Station, and Chinese Ambassador in Bonn Zhang Tong, Deutsche Welle reports. The Cologne radio station has been broadcasting in Chinese since 1965, while Beijing Radio began its German program 5 years earlier. [Text] [LD041100 Hamburg DPA in German 0938 GMT 4 Nov 81]

PRC, ITALY BROADCAST AGREEMENT--Beijing, 6 Nov (XINHUA)--The Broadcasting Administration of the People's Republic of China and the Italian Radio and Television signed an agreement on radio and television cooperation here this afternoon. The agreement was signed by Zhang Xiangshan, director of the Central Broadcasting Administration of China, and Sergio Zavoli, chairman of the board of the Italian Radio and Television. Under the agreement, both sides will cooperate in the fields of radio and television and exchange programs about science, culture, sports, current events, youth and children in the principle of equality and mutual benefit and in the spirit of friendship and mutual understanding. The two sides will also exchange visits and reporting groups. In the evening, Zhang Xiangshan gave a banquet to welcome the Italian guests and celebrate the signing of the agreement. [Text] [OW061620 Beijing XINHUA in English 1524 GMT 6 Nov 81]

CSO: 5500/2034

BOOM IN TELEX SERVICES, CUSTOMERS EXPECTED BY TELECOM

Canberra THE AUSTRALIAN in English 5 Oct 81 p 16

[Text]

TELECOM Australia is expecting the number of telex customers in Australia to double by the turn of the century.

Telecom expects the number of subscribers, at present 33,000, to swell to more than 700,000 by the year 2000.

Telex is already one of Telecom's most rapid growth sectors.

To meet the expected increase in telex demand, Telecom will introduce fully electronic SPC (stored program controlled) telex exchanges.

At present the 33,000 customers in the Australian telex network make 40 million calls a year, of which more than 8.5 million go overseas.

The number of telex services has doubled in the past five years. Every year 9000 new connections are made.

One cause of this is the growing number of small businesses and private individuals using telex facilities.

Telex customers who specifically request the broader range of facilities will be among the first to be connected to the new SPC telex exchanges.

SPC telex, when it is introduced, will initially provide six new facilities for customers. Telecom intends to add further facilities later.

One of the big improvments planned for the introduction is the ability to make automatic conference and broadcast calls. Customers will be able to connect up to 18 parties using an SPC telex automatic conference or broadcast call.

The number of parties which can be called may be increased at a later date.

Previously, such calls had to be put through manually.

Other features of the new SPC system are:

- AUTOMATIC insertion of time and date.
- CHANGEABLE time of clearing
- ABBREVIATED calling of frequently used numbers.
- GROUP address codes for conference or broadcast calls.
- A telex "hot line."

Hot lines are direct connections between two points. No dialling is involved, and messages sent from one of the points will be received immediately at the other, and vice versa.

The two facilities Telecom intends to add later are delayed delivery of calls and redirection of calls.

Delayed delivery allows messages to be stored while a called party is busy or where a message must be sent at a particular time.

The first automatic conference and broadcast calls will be made through Melbourne from next June. A full SPC telex service will be provided by November, 1982.

The main Sydney telex exchange is at present overloaded, but the congestion will be relieved with a cutover of a second similar exchange this month.

By June, 1983, SPC exchanges will have been commissioned in Sydney and Brisbane, as well as Melbourne.

By 1984 Sydney will have an additional 4000 lines.

When SPC telex is introduced in NSW, users who are at present connected to the smaller Canberra, Newcastle and Wollongong exchanges will be connected directly to the Sydney SPC telex exchange.

The new exchanges are a far cry from the manual telex service introduced into Australia in 1964. The first fully automatic service was connected in 1968.

Ten years later Telecom introduced a new generation teleprinter which made full use of microprocessor technology.

In the next few years Telecom expects to reduce its telex maintenance costs by half as a result of the changeover.

Telecom says the economies achieved with these new terminals is being passed on to telex users.

Call charges, particularly for automatic telex calls over long distances last year, were reduced.

CSO: 5500/7507

BRIEFS

SUBMARINE CABLE CONTRACT--Sydney--A $277 million order for the major part of an undersea telecommunications cable system linking Australia, New Zealand and Canada has been won by the submarine systems division of Standard Telephones and Cables of London. The contract was announced by the Federal Minister for Communications, Mr Sinclair, in Sydney yesterday. Australia's commitment, through the Overseas Telecommunications Commission, to the ANZCAN project is about $200 million out of a total of $400 million. The 15,000km communications cable will pass from Sydney through Norfolk Island, Fiji, and Hawaii to Vancouver. It is expected to be operational by 1984. Mr Sinclair said the cable would complement the satellite systems operated by Intellsat. STC Sydney, a telecommunications and electronics company, will be responsible for generating $78 million worth of high technology manufacturing in Australia as part of the submarine project. Mr Sinclair also announced that the Nippon Electric Co. of Japan had won a $30 million contract for a 1370km cable between Norfol Island and Auckland. [Text] [Perth THE WEST AUSTRALIAN in English 3 Oct 81 p 7]

CSO: 5500/7507

BRIEFS

ASIA-PACIFIC NETWORK LAUNCHED--The Asia-Pacific News Network was officially launched by the minister of information, Datuk Mohamed Rahmat, in Kuala Lumpur this evening. The network will heop promote a better understanding among the people in the region and correct imbalances in information flow. Twenty-three news agencies in the Asia-Pacific area are taking part in the scheme which will be fully operational next year. Earlier, in closing the fifth General Assembly of the Organization of Asia-Pacific News Agencies, OANA, Datuk Mohamed Rahmat stressed that the newly launched news network must not only exist but it should strive to fulfill the aspirations of its members. They must not only be great of quantity and circulation of news concerning this region but these had also to be accurate and relevant. He pointed that there was a need to insulate the Asian readership from the distorted news circulated especially by the Western media. At today's meeting, delegates adopted several recommendations. They included guidelines for editorial operations of the news network and training for journalists. Another recommendation was to encourage transnational news agencies to distribute their services only through national news agencies. The next general assembly will be held in New Delhi in 1984. Encik (Ahmad Mustafa Hassan) of Bernama was elected president of OANA. [Text] [BK061353 Kuala Lumpur Domestic Service in English 1130 GMT 6 Nov 81]

CSO: 5500/2034

BRIEFS

SATELLITE IN 6 YEARS--Karachi, Oct 19--Pakistan would be capable to launch its own satellite within 5 to 6 years for which 2,500 competent personnels including scientists, engineers and skilled workers would be required. This was revealed by the Chairman, Space and Upper Atmosphere Research Commission (SUPARCO), Mr Salim Mehmood, while delivering his lecture at the University of Engineering and Technology here today. He said that this University has all the talents, in its students, which would be needed in launching a satellite. He further said that a first class electronics laboratory has been set up by the SUPARCO for the analysis and interpretation of pictures to be received from the satellites. The facilities established by SUPARCO will help analysed data from the firing of rockets while they are in flight, he said. The engineers and scientists who would be joining the organisation are free to join and free to go and they are not required to submit security bonds, he assured. [Text] [Lahore THE PAKISTAN TIMES in English 20 Oct 81 p 1]

CSO: 5500/4510

BRIEFS

FUJIAN BROADCASTING FACILITIES--Jianning County, Fujian Province, spent 40,000 yuan in relocating its television transmission station on the Tiantai mountains some 1,300 meters above sea level. This improves the television reception at most communes and production brigades. Another 20,000 yuan were used to support the maintenance work on wire broadcasting facilities at various communes and production brigades. [OW020933 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 31 Oct 81]

CSO: 5500/4002

COMMUNICATIONS PROGRAM SET TO BEGIN NEXT YEAR

SK040259 Seoul YONHAP in English 0245 GMT 4 Nov 81

[Text] Seoul, 4 Nov (YONHAP)--South Korea will spend about 6.1 trillion Korean won (U.S.$9 billion) to finance a long-term communications program to be implemented during the country's fifth 5-year economic and social development plan beginning next year, the Communications Ministry here announced Wednesday.

Of the projected 6.1 trillion won investment, ministry officials said, 70 percent will go to the expansion of intra-city telephone circuits, 20 percent to the inter-city telephone network and 10 percent to telegraph and international communications facilities.

The communications program calls for 4.3 trillion won (about $6,143 million) over the next 5 years, to increase the number of telephone circuits by 2.5 times to 9,231,000 intra-city telephone lines across the country, and lift the telephone supply rate against the demand rate to 97.2 percent, vs. the present rate of 76.2 percent.

When the communications program is completed by 1986, there will be 19.3 telephone lines per 100 people; the present rate is 8.9 percent.

Ninety-eight percent of telephones will be operated by automatic switching systems, and 62 percent will be connected to electronic switching systems (ESS) by the end of the 5-year period, the officials said.

Full automatic telephone calls to 24 nations, including the United States, Japan and the United Kingdom, around the world will be possible from Seoul by the end of 1983, and from Pusan by 1985, for which 5.2 billion won (about $7.5 million) has been earmarked.

The officials also said that the country will build the fourth earth station for the Pacific international telecommunications satellite by 1985 with a total cost of 8.6 billion won (about $12.3 million).

The No 4 station, which will replace the old No 1 station, will provide more satellite telecommunication services, icnluding live television coverage of major events happening around the world.

The officials said that the communications program is also part of a communications-support plan for the 1988 summer olympic games in Seoul.

CSO: 5500/2034

CZECHOSLOVAK PRESS BUREAU'S ADVANCED TECHNOLOGY NOTED

Bratislava PRACA in Slovak 19 Sep 81 pp 1, 7

[Article by Zuzana Mlada and Vladimir Hudak: "From Tin Can To Display"]

[Excerpts] At Present: Almost 5 Million Lines of Information Annually

This Monday we shall celebrate a holiday...the day of the CTK. Every reader is familiar with these three letters which hide the words CZECHOSLOVAK PRESS AGENCY, or more precisely, its 1,600 employees, and even more precisely, its 380 domestic and 23 foreign editors, administrative employees, technicians...who every day supply editorial offices with 500 pages of political, economic, sports, cultural and other information and interesting news from our country and abroad.

The Beginnings

In the beginning of World War I an organ of the Czech and Slovak emigration in the United States was established in Washington; even then it used the current abbreviation--CTK. The CZECH PRESS BUREAU was founded in London 2 years later and later the CZECHOSLOVAK TELEGRAPH AGENCY was organized in Russia.

However, the official birth certificate of the CTK indicates 28 October 1918 as the date when, after the declaration of an independent republic, the presidium of the National Committee for Press Information established a news agency which signed its dispatches with the abbreviation CTK.

During the first hours only several enthusiasts were working there, but 2 days later its editors were officially appointed and at the same time, the press informed the public that "...the CZECHOSLOVAK PRESS BUREAU--starting tomorrow--will supply newspapers with information about the political, economic, social and other activities of the Czechoslovak nation and its institutions. This bureau and its information must be carefully distinguished from the imperial-royal correspondence agency, a semi-official Viennese institution, and its branch office in Prague, which provides now, as it had before and during the war, information to newspapers at regular subscription charges. We request that editorial offices distinguish the information by identifying the information supplied by the correspondence bureau by initials KK and the information provided by the CZECHOSLOVAK PRESS BUREAU by initials CTK."

Briefly About the Present

We obtained the preceding information about the history of the CTK very rapidly in one of its six editorial departments--documentation. (The others are: international, political, information for foreign consumption, economic and pictorial.) It was Drahos Lustig, the deputy central director of the CTK in Prague, himself who with his colleagues provided us with the recent data--concerning present operations. From their information, we selected some which to us seemed the most interesting. One of the principles of information service agency is brevity; for that reason and with that in view, here are the replies to the question: "Do you know that the CTK":

--is cooperating with every world press agency (TASS, Reuter, AFP, UPI, AP) from which it receives complete service and with which it maintains continuous 24-hour contact;

--signed agreements on bilateral information exchange with an additional 52 national press agencies with which it maintains periodical daily contact;

--in addition to 23 foreign correspondents, has 90 correspondents in more remote areas;

--its most distant coorespondents are--in one direction--Jaroslav Hoeffer in China, and in the other--Karol Filek in New York;

--has one female foreign correspondent--Ilona Kovarikova in Cuba;

--publishes 15 political and economic bulletins and periodicals, the most interesting of which are HOSPODARSKE INFORMACIE ZO ZAHRANICIA [Foreign Economic Information], SVET HOSPODARSTVI [World of Economics], VEDA A TECHNIKA V ZAHRANICI [Science and Technology Abroad], and 100 + 1 ZAHRANICNA ZAUJIMAVOST [One Hundred and One Foreign Items of Interest];

--provides almost 5 million lines of information annually to editorial offices;

--maintains editorial offices in every kraj of our republic and in addition, has seven branches--in Karlovy Vary, Liberec, Olomouc, Gottwaldov, Presov, Zilina and Poprad;

--provides information for all daily and many weekly publications, radio and television;

--its activities "consume" Kcs 270 million annually;

--is headquarters for dispatch of PHOTO INTERNATIONAL pictorial information from the socialist states, through which pass all photographs exchanged by socialist agencies.

Revolution in Technology

In addition, Lustig disclosed that the electronic automated news-processing system introduced in three editorial offices (political, international and information for foreign consumption) on 1 January 1981 means revolution in current technology. (For example, 50-digit teletypes were replaced by 200-digit transtels.) The objective is speed. A year ago it still took 12 hours to dispatch a 100-page address (which is approximately the scope of the report presented by L. I. Brezhnev to the 26th CPSU Congress), today it takes 3 hours.

Comrade Lustig says: "In terms of technological equipment, we have thus reached the level of world agencies, and it should be underscored that we are the first socialist bureau to begin dispatching and receiving information to such an extent by means of display technology and microcomputers. Beginning this year, our editors are using in their work television screens, the so-called display, instead of teletypes and typewriters. And microcomputers control the whole flow of information, its processing, arrangement and dispatch in our editorial offices in the CSSR and abroad."

The new system accelerates information processing several times, speeds up dispatch of information four times, and saves workforces. Moreover, this electronic automated system facilitates direct connection of editorial offices with high-speed typesetters for automatic composition. For example, RUDE PRAVO printed in this manner every document of the 26th CPSU Congress and of the 16th CPCZ Congress. Thus, as it appears, our new technology "saves" workforces not only to our own benefit but also to the benefit of editorial offices and printing shops.

"All this modern equipment was assembled and most of it also manufactured by the department of telecommunications of the CTK," said the comrade deputy director in conclusion. The technicians added that this was not their last word. It is envisaged that further acceleration will dispatch up to 300 digits, but this will need the construction of new, better means of communication--as well as time.

PHOTO CAPTIONS

1. View of the office of international department.

2. Modern displays replaced teletypes.

3. Dispatching for reception and transmission of pictorial information.

9004
CSO: 5500/3001

PAY TV DRAWS CLOSER AFTER GOVERNMENT POLICY CHANGES

Hamilton THE ROYAL GAZETTE in English 15 Oct 81 pp 1, 2

[Text]

Starvision hopes to have a subscription television station on the air by the first quarter of next year after Government amended conditions to its television policy, company president Mr. Arnold Francis said yesterday.

And in defence of the concessions made by Government, the Hon. John Swan, Minister of Home Affairs, said they were only of a minor nature and did not alter the philosophy of Government's policy towards the television industry.

"We made an applicaton to the Ministry of Home Affairs last week," said Mr. Francis. "We have been assured that some conditions set out initially have been amended to the point where we feel a station would be workable."

The major conditions amended included:

- A relaxation of a requirement that no advertisements be broadcast on a subscription television station.
- A ten percent levy on revenues was reduced to what is understood to be a nominal and acceptable flat-rate annual fee.
- Programmes would not have to be approved on an individual basis at first envisaged, but on a basis similar to the existing two television stations.

"All things being equal we hope to be operative by the first quarter of next year," said Mr. Francis.

He added, however, that there were still final points to be clarified. One was a requirement that all station use a common transmission tower. It is now thought that this requirement has been dropped.

Mr. Swan said that none of the amendments were of a major nature.

"The philosophy is still there. We are trying to deal with the practical realities in not introducing any impediments to the deveopment of on-air transmission," Mr. Swan said.

In confirming the amendments to the conditions, Mr. Swan pointed out that subscription television stations would still not be permitted to carry local advertisements.

But, in cases where televised programes were sponsored by foreign advertisers, subscription television stations would not have to erase such advertisements.

"We pointed out that eradicating the advertisements would defeat our purpose in bringing to the Island live events, because we would have to spend time cutting out the advertisements," said Mr. Francis.

Mr. Swan said it was decided to drop the 10 percent levy because it was considered inflationary.

Regarding approval for individual programmes, it was felt the new stations would exert discretion within guidelines of good taste subject to final decisions by the Broadcasting Commissioners.

Meanwhile ZBM station manager, Mr. Bryan Lodge had "no comment" in response to a Tuesday report that the Bermuda Broadcasting Company, which operates ZBM, had applied for a cable television station licence.

The report added a claim that the company had applied through an American firm to the U.S. Federal Communicatons Commission for permission to relay television programmes to Bermuda via satellite.

When asked if ZBM would comment at a later date Mr. Lodge said: "We do not anticipate making ay comment in the future."

CSO: 5500/7506

TIGHTENED TV CONTROLS PROPOSED FOR GOVERNMENT APPROVAL

Hamilton THE ROYAL GAZETTE in English 16 Oct 81 p 1

[Text]

Broadcasting Commissioners recommended tougher controls yesterday in an attempt to improve the quality of Bermuda television.

In agreement with both ZBM and ZFB, the Commission has tightened up existing regultions which date back to 1971 and will now put its proposals to the Minister for Home Affairs.

Said Commission chairman Mr. Robert Stewart: "We are of the opinion that the public are not all that satisfied by the service from the television stations.

"We recognise that Bermuda is a small market and highly dependent on the United States networks of ABC and CBS but there is nevertheless some ability for discretion to be shown."

Two areas of most concern to the Commission were the lack of educational and cultural programmes and the current "haphazard" starting times of shows.

The 1971 controls specified that the stations should broadcast programmes of a minority, cultural or educational interest for at least one fifth of the time between 6 p.m. and 11 p.m.

"The problem is that it is difficult to define these terms," said Mr. Stewart. "We have re-written the old regulations to sharpen up the definitions."

Another Commission recommendation is that programmes should start at the published time.

"We have also recommended that for the hours between 4 p.m. and 5.30 p.m. stations should do their best to present children's programmes. And from 5.30 p.m. to 7.30 p.m. we would like either family programmes or locally produced shows."

The Commission will meet with the Attorney General next week to discuss the proposals before the package is then passed on to the Minister of Home Affairs.

If accepted the regulations will then go to the House of Assembly.

The regulations carry a penalty of a maximum $1,000 fine for offenders.

The Commission is also seeking clarification of the law on video tapes from the Attorney General.

"We want to see what legislation there is, if any, regarding the renting of videos," said Mr. Stewart.

CSO: 5500/7506

BRIEFS

CSSR TELEVISION AGREEMENT--Jan Zelenka, director general of Czechoslovak Television, and Nivaldo Herrera, president of the Cuban Institute for Radio and Television, have signed a protocol in Havana on cooperation in 1982-1983. The protocol provides for exchange of programs, reports and news items on the economic, cultural and social development of Czechoslovakia and Cuba. The protocol also outlines technological aid to be given to Cuban television by Czechoslovak television. A clause on coproduction activity of the two television services is one of the most important sections of the protocol. [Text] [Prague Domestic Television Service in Czech and Slovak 1830 GMT 3 Nov 81 LD]

CSO: 5500/2035

BRIEFS

CLOSING OF 'MI RADIO' PROTESTED--The Dominican Association of Radio-Broadcasters, ADORA, last night rejected the procedure used by the General Directorate of Telecommunications to close down the radio station "Mi Radio." ADORA argues that if there is a violation of the law, whatever its nature, there are established mechanisms to air out any problem. ADORA notes that the Dominican Government considers the rule of law as the present administration's main achievement. In the case of "Mi Radio," ADORA believes that the telecommunications director's actions contradict this claim. In a communique signed by ADORA President (Jose Eduardo Felix), the association says that it does not agree with the telecommunications director's statement that radio and television frequencies belong to the state. ADORA says that there are no laws awarding that right to the state; in accordance with international law, the sole owner of frequencies is the international community. [Excerpt] [FL111702 Santo Domingo Radio MIL Network in Spanish 1000 GMT 11 Nov 81]

CSO: 3010/257

FOURTH PHASE OF SATELLITE STATION TO START SOON

Jiddah AL-MADINAH in Arabic 27 Jul 81 p 3

[Interview with Dr Alawi Darwish Kayyal, Minister of Post, Telegraph, by AL-MADINA: "Eighteen Thousand Car Telephones Within 2 Years"; place and date not specified]

[Text] Telephone, telegraph, and telex communications in Saudi Arabia are evidence of the great efforts undertaken by the Ministry of Post, Telephone and Telegraph in order to improve the standard of services of these public utilities. As a result of these efforts the Kingdom has come to the forefront in this field. Because the government, at the instructions of his excellency, the beloved King, has utilized a large part of its resources to strengthen the above-mentioned services, the Ministry of Post, Telephone and Telegraph has profited from the opportunity to make the dream of each citizen come true. These services represent, of course, one of the first steps toward modern civilization in our country. Bearing this in mind, AL-MADINA conducted the following interview with his excellency, the minister of Post, Telephone and Telegraph, Dr Alawi Darwish Kayyal. His excellency talked to us about many important projects which the ministry is carrying out.

The Fourth Phase

[Question] Your excellency, what has the ministry achieved during the Fourth Phase concerning satellites in the Kingdom, and where will that phase be completed?

[Answer] Soon the plan for the Fourth Phase concerning a satellite station will be presented. This plan will be carried out in Jiddah, and it will include 1,000 disks. Approximately 2 years will be spent on that plan, which when completed, will enable the Kingdom to communicate with all the continents of the world.

One Thousand Disks

[Question] By the end of the Fourth Phase how many satellite disks will there be in the Kingdom?

[Answer] At the end of the Fourth Phase to be carried out in Jiddah. there will be 3,000 disks in the following cities: Riyadh, Jiddah and Ta'if where there is now a satellite disk.

Five Thousand Lines

[Question] How many telephone lines were installed during the Second Five-Year Plan carried out by the ministry?

[Answer] The Ministry of Post, Telephone and Telegraph undertook the installation of 5,000 telephone lines during the second plan.

[Question] How about the third plan your excellency?

[Answer] The installation of 280,000 telephone lines in the Kingdom is included in the third plan of the ministry. These lines will be used in 250 cities and villages throughout the Kingdom.

One Million Lines

[Question] What is the number of lines in service in the Kingdom, and what will it be at the end of the third plan?

[Answer] At the present time, the number of lines in service is 630,000. By the end of the third plan that number will reach approximately 1 million.

[Question] What are the new plans for telephones that will soon be completed?

[Answer] At the end of next month, the telephone office of Moshrifa in Jiddah will be completed. This office will have 10,000 lines and a capacity for 30,000. When needed, new lines can be added. The above-mentioned office will service the whole region of al-Makruna street in Jiddah.

Car Telephones

[Question] Your excellency, what are the plans of the ministry regarding the expansion of an automatic telephone network for cars?

[Answer] Two years from now, 18,000 car telephone systems will be installed to service 30 cities in the Kingdom. With this plan and the help of God, we will be able to answer all needs concerning car telephones.

[Question] Your excellency, taking into consideration the economic status of the Kingdom, the need has become pressing to increase telex communications. What are the plans of the ministry in regard to expand telex service in the Kingdom?

[Answer] Currently, there are 10,000 telex lines in the Kingdom. During the Third Five-Year Plan 15,000, with capacity for expansion, will be installed. That will bring the number of telex lines to approximately 30,000 lines by the end of the plan.

The Main Preparations

[Question] In order to meet the continuous expansion of the various services of the Ministry of Post, Telephone and Telegraph, what plans has the ministry adopted in that regard?

[Answer] According to an agreement made with the Ministry of Planning, the Ministry of Post, Telephone and Telegraph is to carry out all main preparations for its plans in order to face any problems concerning projects completions. Included in the ministry plans are of course excavation and construction of above ground and underground rooms.

Labor

[Question] Among the ministry's concerns is training Saudi labor in wire and wireless communications. Did the training institutions in both Jiddah and Riyadh succeed in furnishing this kind of labor?

[Answer] The ministry had undertaken the responsibility of developing national talents in order to achieve self-sufficiency by having Saudi technicians. Without a doubt the ministry training institutions had taken part in graduating a group of Saudi youth capable of assuming responsibility. The diploma, which is conferred by the center upon qualification is equal to a high school diploma. Two hundred and thirty students will be graduating in the next few months in all fields of wire and wireless communications. The ministry has provided great facilities to the students such as housing, bonus, and high level of qualified instructors in science.

Periodic Meetings

[Question] How can the ministry solve the problems that face the companies carrying out the projects?

[Answer] At approximately the end of each month, a meeting is held in my office. Attending are ministry officials and a number of presidents and officers of the companies carrying out the projects. The purpose of the meeting is to discuss the difficulties facing those companies as they continue their work such as securing labor. Coordination is also under way among the companies concerning the interlinking of ministry projects, so that the companies cannot have any excuses for not completing the contracts. These meetings, without doubt, have contributed to solving many problems presented by the officials of the ministry and of the companies that are carrying out the projects of the Ministry of Post, Telephone and Telegraph.

CSO: 5500/4732

BRIEFS

'ANA'-'JANA' AGREEMENT--Aden, 5 Nov (ANA)--An agreement for a joint program of action between Aden News Agency (ANA) and the Libyan Jamahiriyah News Agency (JANA) was signed today at ANA's headquarters. It was signed by Najib Muhammad Ibrahim, director of ANA, and by 'Abd al-Salam 'Ali Ashur, member of the People's Committee of the Libyan Brotherhood Bureau in Aden. The agreement provides for the exchange of news about political events and economic and social achievements in the two fraternal countries and the distribution of such news to official information media in the two countries. It also provides for constant coordination between the two agencies on the information stance to be adopted vis a vis the crucial issues facing the Arab nation and their place in world politics as well as on regional issues so as to refute successfully the fabrications and concoctions of the enemies of the Arab nation and expose the hostile movements by the imperialist, Zionist and reactionary forces. [Text] [LD060320 Aden ANA in Arabic 1400 GMT 5 Nov 81]

CSO: 5500/2034

BRIEFS

MICROWAVE COMMUNICATIONS SYSTEM INSTALLED--Cairo, 8 Nov (MENA)--It has been decided to set up a nationwide microwave network to provide instant communications between all the centers of the Egyptian armed forces all over Egypt. This network guarantees the secrecy of communications among the armed forces in addition to removing problems arising from faulty cables. In tomorrow's issue, the MAY newspaper says that Egyptian army experts are currently studying the balloon system used by the United States to supervise its borders. The balloons gather information and send it to monitoring centers--similar to earth monitoring stations. The cost of establishing the balloon system is estimated at $80 million, while the radar equipped (?E-2C) planes, which we will receive from the United States, cost about $165 million per plane. The four planes for which we have signed a contract are not sufficient to cover our borders. However, if we establish the balloon system in addition to buying these planes, we will have a comprehensive monitoring system which will cover our entire border. [Text] [NC082027 Cairo MENA in Arabic 1952 GMT 8 Nov 81]

CSO: 5500/2034

MUSCAT-SALALAH DIRECT TELEPHONE LINK

Muscat 'UMAN in Arabic 26 Oct 81 p 1

[Article: "Development of Telephone Links in Southern Region, Direct Links Between Capital, Salalah by Next July, 8,700 Telephone Lines by End of Five-Year Plan"]

[Text] 'Abd-al-Rahman Sabti, head of the Department of Public Communications in Salalah has announced that work is presently underway to connect the southern region and the capital with direct telephone links. He said that the project would be completed by the second half of next year and that it would secure direct connections between the southern region and the capital as well as outside the Sultanate.

'Abd-al-Rahman Sabti stated in an interview with an 'UMAN correspondent that 4,200 lines had been set up in the southern region in recent years including 2,000 lines which have been completed since 1979.

He explained that there are two stages to the planned increase of lines in the southern region within the Second Five-Year Plan. This is to cope with the steady increase in the city of Salalah and surrounding villages. He said that the first stage includes setting up 2,000 telephone lines in Salalah, 200 lines in Raysut and 25 lines in Mirbat.

The second stage includes setting up 2,000 lines in Salalah. With this the number of lines in the southern region will reach 8,700 by the end of the Second Five-Year Plan.

Concerning the remaining villages, the Second Five-Year Plan calls for telephone exchanges in Thamarit and Sudh, each carrying 100 lines.

'Abd-al-Rahman Sabti indicated that studies are currently underway to determine the needs of the other areas within the southern region in preparation for measures to be taken there.

Concluding his interview he said that the department is exerting every effort to provide the citizenry with the best and most modern services without consideration for financial gain. In today's world providing the services is only a portion of the overall cost of the services. When the time comes to reconsider the costs we will not hesitate to lighten the public's burden.

CSO: 5500/4704

BRIEFS

EXPERIMENTAL TELEVISION--Maputo, 9 Nov (AFP)--About 10,000 people watched the first of Maputo's experimental weekly television programmes on private sets and in public viewing centres in the capital at the weekend, the official Mozambique News Agency, AIM, reported today. This is the third stage in Mozambique's experiment into television, which began in August 1979 with 40 days of programming. The second step was training staff and installing equipment in the station in Maputo. The experiment is expected to last until the end of 1982, when the government will decide whether to introduce permanent television. [Text] [AB091618 Paris AFP in English 1543 GMT 9 Nov 81]

CSO: 5500/5619

ISCOR STARTS UP ON-LINE COMPUTER SERVICE NETWORK

Johannesburg THE STAR in English 19 Oct 81 p 26

[Text]

One of the most extensive and sophisticated on-line computer service networks is coming onstream for the mines of Iscor.

By the end of 1981 six powerful Prime superminis based at the northern Cape's Sishen iron-ore mine, the north-western Transvaal's iron-ore mines at Thabazimbi, the Ellisras open-pit coking-coal mine, and Natal's huge Durnacol underground colliery will be linked through Primenet to Iscor's data-processing centre in Pretoria.

IMPLEMENTED

A seventh Prime computer at Iscor's Newcastle works, where a graphics and a steel-rolling calibration application are being implemented, will also be hooked into the system at a later date. The networking project began in 1979 and the first minicomputer was installed in January 1980.

Mr Abie Fullard, manager of Iscor's mines-computer systems, said that mine-management skills and resources were being taxed not only by the magnitude of such schemes as the development of the Richards Bay coal and the Sishen-Saldanha iron-ore export projects but also by the sudden price fluctuations in overseas markets, the ever-increasing price of capital development, and the shortage of skilled manpower and environmental constraints.

The objective of Primenet was for the computer service to assist Iscor's mine managements in their decision-making. All the information needed by mine managements was on hand but there was increasing insistence that it be readily accessible in the right form at a time it was needed most.

A centralised DP system to serve mines so far flung was impracticable because the Post Office communications system in 1979 was not such that acceptable communication response times could be guaranteed, especially to distant sites such as Sishen and Ellisras.

NOT FEASIBLE

The alternative — total decentralisation — was also not feasible as each mine would have to have its own system, a call on manpower quite beyond Iscor's resources. Furthermore it was difficult to obtain and retain staff capable of, for example, "three-dimensional optimisation for pit-planning" at remote sites because people of this calibre and experience wished to remain near to the mainstream of technological development on the Witwatersrand.

Iscor chose distributive data processing strategy — keeping the full DP development in Pretoria but "decentralising processing horsepower" by siting minicomputers at the mines and manning these with data capturing and operations staff who were much easier to attach to mine staff.

CSO: 5500/5613-E

NEW BLACK TV STATION WILL BROADCAST ON 1 JANUARY 1982

Johannesburg SUNDAY TIMES in English 18 Oct 81 p 12

[Article by Kevin Davie]

[Text]

BRUSH up your Zulu and Xhosa, TV2 is almost here.

Technical, creative, production and administrative staff have been moving into their new home, old Broadcast House in Commissioner Street, Johannesburg, to prepare for black television's first broadcast on January 1.

The paint is still drying, the workmen putting the finishing touches to the interior and exterior of the building, cleaning staff are being hired, and technicians are trying to iron out last-minute problems.

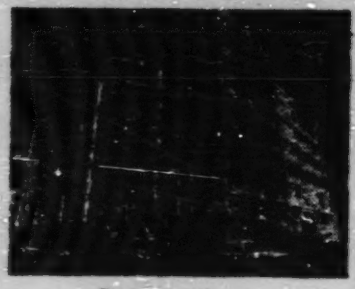
It's all systems go, and those in the know say they will definitely be ready come the inaugural broadcast.

Those responsible say that TV2 will attract a fair number of white viewers, especially to programmes like music and sport.

Mr Tim Ellis, the superintendent of TV2 and TV3, said the building was completely redesigned internally.

"The builders created a virtual shell, and then rebuilt the interior along modern studio lines."

There are three main studios and one smaller one. TV2 will also make use of several outside broadcast units and regional offices around the country.



Broadcast House

"We have offices in Pretoria, Port Elizabeth and Durban, each with an outside broadcast unit," said Mr Ellis.

Moving in has been very hectic as there has been so much to do in a short space of time.

"We have encountered problems, but they're all solvable.

"One of the main difficulties lies in the provision of technical equipment, which is mostly custom-made, and so suppliers cannot supply that quickly," he said.

The equipment was the latest and best available, Mr Ellis said.

"A lot of our equipment is better than that they have at Auckland Park.

"Because of developments in micro-electronics, most of it is smaller and lighter and easier to handle."

He said a further problem had been the training of staff.

"But both those in front of and behind the cameras have learnt quickly, and are thoroughly professional."

Because of the enormous amount of planning involved, organisers have been working fulltime on TV2 for some years now.

"A core of organisers began making plans and programmes in 1975, but we only really got going in earnest in January, 1979.

"In some cases, particularly documentaries and drama programmes, we already have a stockpile which will last six months," he says.

All studio programmes will be made at Broadcast House, but actually broadcast from Auckland Park.

TV2 has also bought several programmes from overseas, and has a large dubbing department to change these programmes into black languages.

You can expect American cops to speak fluent Zulu!

"This dubbing operation is quite an art," said Mr Ellis, "the language has to be adapted to the peculiar movement of the lips, which isn't easy."

He said there was shortage of suitable black talent, and a host of personalities were about to establish themselves on the screen.

"In some cases we are using people who established themselves on radio, but in most cases we have discovered new faces who are very capable on the box."

TV2 is the first phase of a planned two-stage development for black television in South Africa.

In 1983, TV3 will begin broadcasting the Sotho group of languages.

CSO: 5500/5613-E

BRIEFS

FIRST FIBER OPTIC CABLE--A new lightning and electricity-proof telecommunications cable gets the official stamp of approval today after its installation in one of the Transvaal's lightning belts. The first "fibre optic" cable has been installed over a 7m stretch from Witpoortjie to Roodepoort. It will be formally accepted at a ceremony in Boksburg today by Mr H H Smit, the Minister of Posts and Telecommunications, from Standard Telephones & Cables South Africa. STC has researched the use of fibre cable based on its use in Germany. STC said the new system had other advantages over traditional copper cable in that it was unaffected by moisture seepage, and required little surveillance or maintenance. It is more expensive than conventional cable, but was needed in smaller preportions because it was much thinner. Fibre cable the thickness of a hair could replace cable as thick as an arm. The system could be used to replace any cable which was subjected to electrical interference and had a potential wherever copper was used to transmit signals. [Text] [Johannesburg RAND DAILY MAIL in English 19 Oct 81 p 13]

CSO: 5500/5613-E

RAINS CAUSE TRANSMISSION PROBLEMS

Dar es Salaam DAILY NEWS in English 23 Oct 81 p 1

[Text]

Tanzania's mass media institutions had difficulties in getting news messages from international news agencies for the past two days because of defects in the cable connecting the radio receiving station and the Extelecom main building in Dar es Salaam.

An Extelecoms spokesman was not in a position yesterday to say when the defect would be rectified but he explained that engineers were working round the clock to identify the fault on the 40-kilometre long cable.

He said news messages were, meanwhile, received at the radio station and retransmitted through a local automatic transmitter to the press offices, including the *Daily News*. The transmission problems are suspected to have been caused by the recent rains, he said.

CSO: 5500/5617

KAUNDA COMMISSIONS CHIPATA--LUSAKA MICROWAVE LINK

Lusaka TIMES OF ZAMBIA in English 24 Oct 81 p 1

[Excerpt]

A GOVERNMENT that is ignorant of the aspirations and responses of the people is bound to fail no matter how committed it may be, President Kaunda said in Chipata yesterday.

Speaking at the official commissioning of the Chipata-Lusaka microwave link and radio transmitter of the Zambia Broadcasting Services, Dr Kaunda said mass communication was an essential tool of mobilisation of the people and harmonisation of all efforts for the common good.

He said it was through the communications media that the Party and its Government was able to explain the benefits of the programmes it had embarked upon and arouse the supportive response of the masses.

He reaffirmed his conviction that the mass media was one of the key pillars in the defence against external subversion and for the preservation of peace, unity and freedom in the nation.

"Our survival lies in improving the country's mass communication," the President said.

It was the policy of the Party and its Government to bring and improve radio and television reception to even very small centres of the country.

He urged Radio and Television Zambia to continually reflect Zambian values and aspirations and respond to developments as well as providing useful education and entertainment in their programmes.

In commissioning the Chipata microwave link and the associated exchanges, Dr Kaunda said if a rapid development of natural resources was to be achieved in Africa, the continent must "get hooked" to the rest of the world.

"The African continent cannot afford to remain isolated nor continue to lag behind technologically."

But, he said, although telecommunications were basic and necessary to modern life, there were many parts of Africa where they were still non-existent or insufficiently provided.

"To compound the problem further, where they exist, they tend to be between the African country and Europe and not between two African countries that share a common boundary.

"This is the situation which the Organisation of African Unity deplored in the early sixties. It still obtains, by and large. Today we are doing something positive to correct it."

He said the microwave link he was commissioning would go a long way externally, in providing direct access to countries of Eastern Africa and even further beyond, to the most parts of Africa and the world.

"Internally, it provides one more important infrastructure necessary for rural development."

He said two rural regional stations in Mongu and Solwezi which were being re-equipped had only radio facilities while Mansa, which would have radio facilities in a few months' time, would be developed to the standards of other centres.

The President said with the provision of microwave facilities to these regional stations television would be brought to the centres concerned as it was the policy of the Party and its Government to bring improved radio and television reception to every small centre.

He was impressed that the high transmission masts were designed, assembled and constructed by Zambians but warned there was no point in undertaking such an expensive venture if the objectives were not being reflected in the quality of programmes projected.

He thanked the Posts and Telecommunications Corporation workers for completing the microwave link on time in spite of handicaps which were inevitable to landlocked Zambia.

CSO: 5500/5616

ELECTRONICS LINK-UP WITH YUGOSLAVIA REPORTED

Salisbury BUSINESS HERALD in English 5 Nov 81 p 1

[Text] Co-operation between a Yugoslavian firm and WRS (Pvt) Ltd has resulted in the manufacture of new telephones and PABX systems in Zimbabwe.

Mr Paul Taylor, joint managing director of WRS, said that because the equipment will have a high local content and will be locally assembled, there should be substantial foreign exchange savings.

"There will also be strong export potential to neighbouring countries," said Mr Taylor.

He said Zimbabwe's telecommunications network needed to be extended and the large Yugoslavian electronics firm, ISKRA, wanted to be involved in this development.

This gave WRS the opportunity to diversify but remain in the high technology field.

ISKRA produce a variety of telephone sets and fully electronic PABX systems. It will supply WRS with component parts, the initial technical back-up and technical training.

Mr Taylor said the PABXs will range from 16 to more than 100 lines, and are small smaller, silent and more reliable than the electro-mechanical type.

When the first products are on the market in early 1982, WRS will have fully trained maintenance teams and user training facilities.

Asked about the effect of import allocation cuts, Mr Taylor said production would be reduced in proportion to the cuts and efficiency will not be as high as desired.

As part of the diversification drive, the company is manufacturing mine detectors for which a large export order is nearly complete, cash registers and field telephones. A cordless telephone is awaiting PTC approval before being locally produced.

CSO: 5500/5618

FILLIOUD, MEXANDEAU INTERVIEWED ON FUTURE OF TELEMATICS

Paris ZERO UN INFORMATIQUE in French Sep 81 pp 69-72

[Text] What place will telematics occupy in the great arena of social and economic communication? What are the government's priorities in this area? Finally, what changes are the new telematic resources going to bring into our everyday lives, both at work and at home?

Georges Fillioud, Minister of Communication, and Louis Mexandeau, Minister of Posts and Telecommunications (PTT), answer questions on these subjects in an exclusive interview tih "01 Mensuel."

01: Mr Minister, if we might glance to the future, the first question which comes to mind is this: Excatly what roles can data processing and telematics play in communication and how can the consequences be measured?

Georges Fillioud: Data processing developed above all as a management tool of the great organizations (agencies, businesses) or as a tool for forecasting or planning. The appearance of microprocessors made possible a change in scale. From now on, people will be talking about domestic data processing. The linking of the latter with television and the telephone gave birth to telematics, which from now on can bring data processing within reach of all pocketbooks and meet all needs.

Simplified use of the instrument and linking it with widespread technical means (the telephone, television) are going to introduce telematics into everyday life.

We therefore have the makings of a true revolution in communications. The satisfaction of administrative requirements, the ability to perform commercial transactions (ticket reservations), and just the immediate availability of practical information of every kind (weather, transportation, etc.) would provide more time, cut down on travel, simplify life....

Telematics can also play a special role in decentralization, if a volunteeristic policy is mobilized in that direction. And such a policy is absolutely necessary, since telematics are only a tool which reflects the "social project" directing its use.

OI: Right or wrong, a contrast is often made between telematics and individual data processing. In your opinion, can the latter be an obstacle to social communication?

GF: The significance of the word "individual" should not be exaggerated: The interaction of systems allows for a certain form of dialogue; systems can also favor interpersonal or group communications: Such is the case of the teleconference, computer assisted, which is being developed in the United States and which could, undoubtedly, fill in France a very useful role in experimentation and social research. To avoid the dangers of using data processing in the way you seem to fear, experiments should be encouraged which enhance the uses by groups or associations.

OI: Telematics, for its part, unleashes a certain number of fears about the abuses of power it may lead to. How do you reconcile, in a democratic society, State control of telematic capabilities and freedom of information?

GF: In a democratic society the State is only one of several users of telematics. As for the problems of entries on card indexes, their use, etc., there exists a national data processing and freedoms Commission, independent of the executive branch, which is capable of guarding the respect and protection of individual rights and freedoms. As for freedom of information, the great documents about the press (the law of 1881--the ordinance of 1944) and, in the audiovisual area, the ongoing reform which should lead to the real independence of these media in relation to governmental power, seem to me to be adequate guarantees.

OI: If independence is guaranteed, another form of discrimination can come from the taxes imposed or the competence required. By what means can equality of access to information be assured, when such access is possible only through expensive and complex technological means?

GF: That is a real problem but the relative price of this equipment will come down as a result of mass production. Moreover, these means should be accessible to all in open consultation locations. And, telematics will be only one of several information aids: The printed press and television will continue to play their role, which is predominantly for immediate, live information. I am convinced that a page of data seen on a screen will never replace a page of a newspaper.

OI: In a more specific area, that of the press, many fears are also becoming apparent. Isn't there a risk that the information used by telematics will be regulated by rules foreign to traditional press ethics?

GF: On the subject of telematics there is currently a legal vacuum. The code of the PTT ("private correspondence") no longer appears to be adapted to the evolution of technology and methods. It will definitely be necessary to change this situation by introducing rules which could merge with those of the written press (right to reply, responsibility, etc.).

That's one of the questions which will have to be examined by the national press-telematics commission which will be formed in the near future, at the request of the President of the Republic, specifically to prepare a debate in the Parliament on that subject.

O1: Mr Minister, developments in telematics are today becoming more and more numerous and diversified. What are your major priorities in this area and what are the budget lines which correspond to them?

Louis Mexandeau: As for telematics, by the networks that it is completing and offering to the public, by the numerous appeals to service companies in anticipation of the perfection of multiple access logic systems, by the standardization of procedures, by the definition and purchase of terminal equipment, the PTT Administration occupies a predominant position in the market. This sector's commitment to development is materializing in this area through annual investment expenditures on the order of 2.5 billion francs, not counting th eportion related to the Telecom 1 satellite.

The industrial program will be sustained, but we will see, on the one hand, development which is united (voluntary) rather than imposed and, on the other hand, more specific development of collective telematics or professional telematics.

O1: At the administrative level and still in the area of telematics, do you foresee a redefinition of areas and missions among the departments and organizations attached to your Ministry and those connected to other interested parties?

LM: In the current situation, concerning the technical branches of the PTT Administration (CNET) [National Center for Telecommunication Studies] or of the PTT Ministry (CCETT), [Common Center for Television and Telecommunications Studies], no redefinition of areas is planned with the branches of other ministries; current cooperative arrangements will continue and be developed.

O1: As a result of the very expansion which telematics is now undergong, the problem of the standards controlling data transmission is becoming particularly acute. What is your view of the role of the departments in your Ministry in such a complex area, which is clearly multifaceted?

LM: In the area of data transmission, as in the whole realm of telecommunications, we are actively pursuing a policy of standardization and particularly international standardization. The objective is to avoid fragmenting the market into incompatible systems leading to the creation of captive markets for the profit of large multinational groups.

The purpose of standardization is to protect the interests of the user, who must be assured of being able to communicate with all the users of the same kind of service, and who must be able to have available the greatest range of equipment at the best prices.

Standardization also promotes the interests of French industry, which must be able to play its role fully in both the national and world markets.

Naturally, in the context of this policy, France actively participates in the work of competent international organizations: CEPT [European Conference on Posts and Telegraphs], CCITT [International Consulting Committee on Telephone and Telegraph], CCIR [Radio telegraphic Interregional Consulting Committee], ISO [International Standard Organization].

We should also realize that since data transmission is a rapidly evolving area, as a result of technological progress, the policy of standardization must be developed so that it does not stifle creativity and allows for adapting to new situations.

01: More precisely, can you define the directions pursued in the three areas of videotex, local networks and external networks?

LM: One approach should be pointed out first of all: In the field of videography, we insisted on having identical standards (for layer No. 6 "presentation") for the interactive Videotex (on the telephone network) and the broadcast teletext (on the television network). That was possible chiefly thanks to the existence of the common laboratory of TDF and CNET; that is, the CCETT.

As for Videotex and Prestel, there is reason to emphasize that the problem is now rectified at the European level: Last May at Innsbruck, CEPT's adoption of a unique European standard put an end to the divergences which had arisen in the past between the Frenchand English systems, especially. In the same spirit, we are studying, with our European partners, the possibilities of reconciling this European standard and the standard recently published by ATT for the North American continent.

You also brought up the local networks. Our thinking should focus not only on a particular type of loop network but on the general problem of the business network. At a time when the concept of RNIS (integrated service digital network) is being studied for public networks and when we see fiber optics entering the picture, the standardization effort must take into account, for the business communication system, not only data but also the spoken work and pictures.

For our part, we should go beyond parochial quarrels (configuration as a star, in a loop, or bus-shaped; a network with subscribers selected competitively or a pay-as-you-go system) and address two fundamental objectives for the local network: on one hand, easy interface of the local network with the public one and, on the other, easy interafce with the local network by the terminals, planned for the public network (telematic terminals).

The present status of standardization of the public network provides, for that purpose, a solid foundation (particularly, decision of the CCITT like X25 or X21 and S62, S70, etc.).

As for external networks, the problem there, too, is not to take a position vis-a-vis a particular contractor's set of procedures like IBM's SNA system (which can be compared with the DSA system of C11-HB). What is important is to promote an architecture and procedures accepted worldwide and allowing for the widest interconnection of data processing systems and terminals.

I would say that, in this extremely complex field, the results obtained are encouraging. As you know, the basis is the architecture model in layers of the ISO. In evaluating the first three layers of this model, we can consider that the decisions of the CCITT like X25 and X21 provided a satisfactory response. For level 4 (transportation), extensive discussions have taken place with contributions especially from ECMA [European Association of Computer Manfuacturers] and have led to CCITT decisions like X70. Work is progressing within Commission VII of the CCITT. For higher levels, it seems to us that decision X62 developed for teletex can serve as a foundation for further work.

OI: The international dimensions of telematics raise the question of more and more telecommunications equipment arriving on the French market. What is your policy in regard to approval of these products?

LM: The General Directorate of Telecommunications must assure the overall quality of the network. The whole procedure for equipment approval is one of the measures to achieve this general objective. More specifically, approval of private terminal sets makes it possible to avoid later on any disturbances of the network because of incompatible equipment, but also to protect the user against the malfunctioning of his own set.

The judicial basis is in the PTT Code, articles L32 and L33, which define "Telecommunications" and their monopoly. Articles D440 and D441 to D445 provide the regulations covering private sector supply of terminals and the requirement for their approval.

The approval procedure is regulated by an administrative text, the general instruction on Telecommunications service (section TC1, which is being revised). From the technical point of view, approval is based on specifications suited to France but which are derived, in the great majority of cases, from international texts (particularly, the decisions of the CCITT).

In France, unlike most other countries, the approval procedure applies indiscriminately to all equipment no matter what its origin or manufacturer. The only "restriction" for foreign equipment is that it be presented for approval by a French legal firm. No equipment is refused approval because of its origin.

As for modems, the French position is one of the most open. Whereas all modems in Italy are furnished by the PTT, and a clear majority of them is furnished by the agencies in Federal Germany and Great Britain, in France the major part of all equipment is of private origin. For the proper functioning of the network, modems integrated with terminals (this case is becoming common) must continue to be seen at the time of approval.

OI: There is another area in which foreign participation can mean a cultural and economic dependence: Data banks of foreign origin. What is your position on this subject?

LM: In the area of data banks the role of the PTT is limited, as a general rule, to the transfer of information. The promotion of these banks in France is not its responsibility but that of other ministerial departments as well as the suppliers themselves. The same is true with regard to the problems of economic and cultural dependence which the use of foriegn data banks may eventually raise.

To meet the developing needs of users with respect to distant access to sources of information, the French administration of the PTT has been striving, since 1978, to establish international public data services by bulk switching.

This action led in particular to: Establishment of the Euronet network, in cooperation with the Commission of European Communities. This network has been operating since 1979 and gives access to more than 150 data bases or banks located in the member countries.

In 1980, a public bulk switching service was also opened with the United States. Access to this service, as to Euronet, is assured via Transpac and an international transit node (NTI) used by management.

In the context of competition among suppliers, the Transpac network permits the development of a national information market. Through the various possibilities which it offers for connection with foreign networks, it also permits French suppliers to expand their market to the international clientele.

Finally, PTT's free installation of Videotex terminals for voluntary subscribers to use the telephone director service will lead to the creation of a very important potential market for French data banks, the number of clients quickly mounting into the millions. General public data banks should then be developed rapidly.

01: Mr Minister, do you think that the Telecom 1 program can effectively compete with SBS-type services, which are now American, but which should soon become intercontinental?

LM: The French communication satellite program Telecom 1 will be operational about 3 years later than the SBS program, a satellite system put into operation by three North American companies (Aetna Life and Casualty, Comsat, and IBM) to offer digital links to the large corporations on United States territory. SBS has been operating since the beginning of 1981 but it should be pointed out that the SBS company has not, in spite of is efforts, obtained the status of international "carrier" from the Federal Communications Commission. In addition, the coverage of SBS satellites is limited to the North American continent.

Telecom 1, in its role of supplier of digital links to businesses (which is only one of its missions whereas SBS is entirely devoted to it) is based on a technical design equal to that of SBS and certainly more advanced than that of the American Satellite Corporation, another North American program which has had significant commercial success.

The two areas in which Telecom 1 is undeniably ahead are in signaling, on the one hand, and land sub-networks, on the other. The signaling, in conformance with European and international standards presently in effect or being defined, is of an advanced type and is going to make Telecom 1 the first digital network with integration of services in the world.

The land sub-networks, which appeared necessary from the beginning of the program, for draining toward the divided antennas the communications of businesses located near them, were also defined in conformance with the transmission and switching standards of the European Conference of posts and telecommunications, and are thus adapted to the European mission of such systems. it should be noted in this connection that SBS had to introduce rather late this concept of divided antennas and finance local switching and transmission equipment which will be delivered to it at the end of 1982 and which should, in the end, handle more than 60 percent of its traffic.

The equipment and terminals developed for Telecom 1 (videoconference rooms, fast telecopiers, data processing...) are also defined in accordance with the European agencies, especially in the context of the European videoconference project EVE or of the data processing pilot project Nadir.

Whereas the SBS system was established with the goal of "skimming off" business traffic at the expense of the traditionally using companies, the concept of Telecom 1 is, on the contrary, based on integration into existing networks with a goal of complementing the services offered. This concept is better adapted to the situation which exists in Europe, as is borne out by the interest shown in the program by the agencies of our partners. Germany has indeed decided to use Telecom 1 for its national needs and, with the Eutelsat organization serving as an intermediary, Telecom 1 will also enable international services to be offered in Europe.

The expansion of service to intercontinental traffic should be achieved by linking the SBS system with Telecom 1 through the Intelsat network or fiber-optic ocean cables in an initial phase. After that, it's possible to foresee an interconnection by satellite linkage.

01: What is your policy in the area of the commercial services which are offered by the PTT and which may become competitive with those proposed by private industry?

LM: As for the commercial services offered by the PTT and which are not monopolistic, the PTT must be present on the market either themselves or through their affiliates. This presence, if it must be affirmed more than it has been previously, will take into account the sometimes difficult situation of private sector businesses, and studies are underway to insure that the competitive balance is not upset by the power of the PTT at the expense of all the businesses activein the sector.

9816
CSO: 5500/2007

NEW TESTING PROCEDURE FOR ELECTRONIC SPC SWITCHING SYSTEM

Rome NOTE, RECENSIONI, NOTIZIE in Italian Apr-Jun 81 pp 66-77

[Article by G. Bertieri, ITALTEL, Milan, R. Scarinci, Higher Post Office and Telegraph Institute: "New Methods for Certifying Electronic Automatic Switches with Recorded Programs"]

[Text] Summary. This work reports on an experiment which is still in progress at the switching and signaling laboratory of this institute is to propose a new procedure for the certification of new SPC automatic electronic switches. Essential characteristics are remote checking post-processing, with suitable program, of data recorded from the center.

1. General Remarks

The main functions which a telegraph switching exchange must perform are as follows:

(a) Establishment and separation of connection;

(b) Exchange of messages;

(c) Special services:

Documented or undocumented rate determination, depending on the particular case,

Determination of user categories,

Dispatch of written signals.

Making an entirely electronic automatic switch, capable of performing the above-indicated fundamental functions, offers the following advantages, compared to the traditional electromechanical automatic switches:

Smaller size (ratio of 1:5) and less weight of apparatus;

Less energy consumption;

Longer duration of equipment compared to lifetime of electronic components;

Reduction of expenditures;

Faster operating speed;

Possibility of offering the user special services.

2. EDS Switching System

The EDS (Electronic Data Transmission System) System is an electronic switching system for telex and data of the recorded-program type.

The switching system is asynchronous and transmission is accomplished by analog carrier waves (FDM channels); it is capable of connecting as many as 28,000 user lines and can process more than 50 calls per second.

An EDS center can be visualized as being subdivided into two parts:

A centralized part which processes programs mostly oriented toward switching;

A part for the connection and adaptation of lines.

Main Units (Figure 1)

PE--program control unit which follows the instructions provided for in the program;

GE--apparatus control unit which runs the traditional peripheral units, that is to say, the tape and disc memories;

TE--Generating unit for timing which generates the basic operating rhythms;

SE--memory unit with the following functions:

Exchange between the various units,

Support of programs and data,

Image of location of lines and communications in progress;

LE--line control unit which makes it possible to interconnect among each other, with perfect trunk group, the lines that are switched from the center.

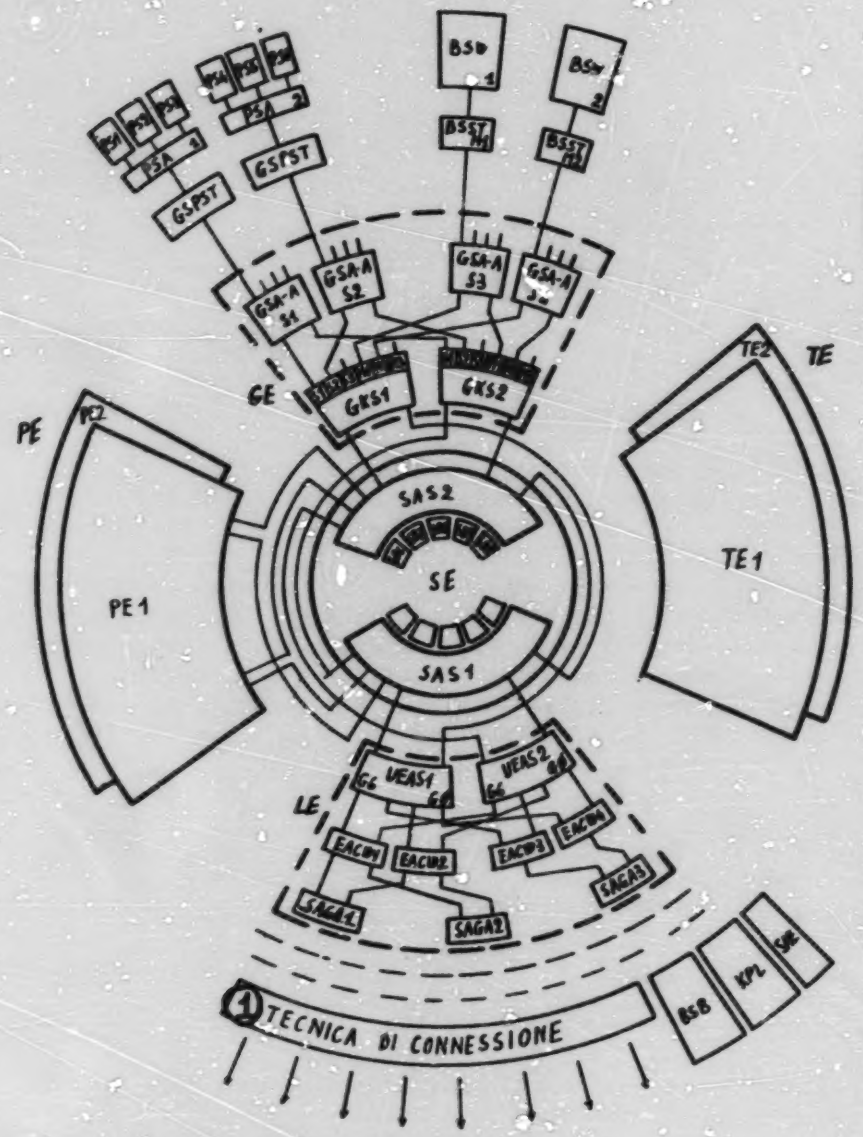


Figure 1. Automatic switching EDS block diagram. Key: 1--Connection equipment.

These units interact among each other on the basis of the multiprocessing method.

The various units are not directly connected but can exchange information among each other through SE memory units.

Each unit is duplicated in modular redundancy (Figure 2b) for the purpose of increasing the reliability of the entire system with respect to parallel redundancy (Figure 2a) where a breakdown on two parallel lines would place the entire system out of action.

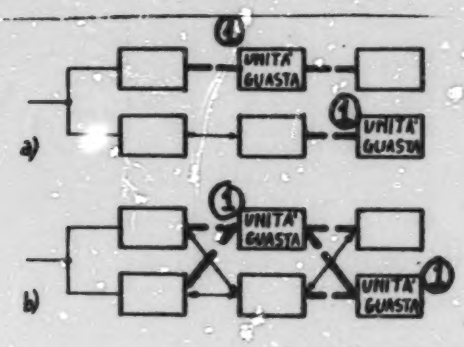


Figure 2. Redundancy. (a) Parallel; (b) Modular; 1—Unit that broke down.

The operating principle here is the principle of multiplex with asynchronous time division; it consists in transmitting only the polarity inversions among interconnected lines (3).

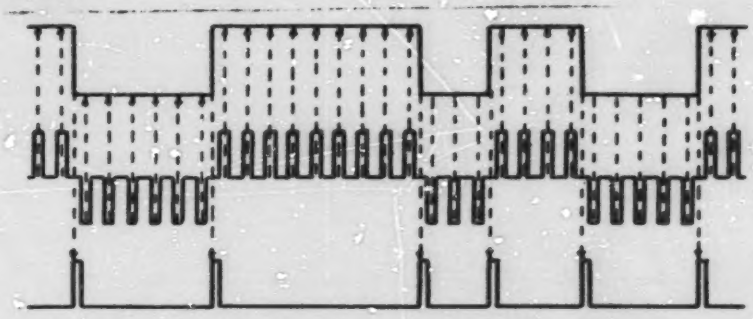


Figure 3. Sampling of signal. "1"—binary signal; "0"—multiplex with synchronous time division; EDS multiplex with asynchronous time division and translation of polarity inversions.

We note as a matter of fact that, statistically speaking, two successive signal elements, in 50 percent of the cases, present the same polarity; it follows from this that the number of polarity inversions to be transmitted will be half the total number of elements in the signal. In the end, the multiplex involvement turns out to be less.

The software of the EDS system consists of two fundamental parts:

Software of the operational system which contains the switching programs;

Software of the testing and maintenance system.

The switching program calls for preserving a memory zone for each connection and for its entire duration. In these zones, the data which characterize the connection are memorized.

After that, the system uses a routing subprogram which, by analyzing the selection digits, determines the destination of the call and the rate schedule step for billing purposes.

Another subprogram provides for the selection of outgoing junctions.

The connection between an incoming line and an outgoing line can be considered to be exclusively of the software type: transfer of numerical information from incoming line to memory and from memory to outgoing line. This virtual connection lasts 800 ns for every information transmitted. From what we have said so far--although only in a succinct manner for reasons of brevity--it is obvious that it is necessary to place procedures for testing these numerical automatic switches on new bases and on new concepts. As for the rest, since the physiognomy of the operator at the exchange has been changing and is moving closer to that of an operator at a data processing center, there is even more reason to change the physiognomy of the tester [certification expert].

It is evident that the issue of the approval certificate in this case involves a major effort and a knowledge, not only of the problems of traditional telegraphy, but also of a standard data processing center.

We must therefore keep in mind that, especially in certifying the first plants, an additional difficulty might arise in the "dialogue" between automatic switches which turn out to be dishomogeneous not only in terms of the equipment (electronics --electromechanical) but also because of age (for example, state members).

Determining that a numerical automatic switch operates properly therefore presents major difficulties both in relation to its structure (large-dimension data processing center) and in relation to the tasks to be accomplished. It follows from this that certification [approval] by the ISPT [Higher Post Office and Telegraph Institute] can only be assigned to a group of technicians who are differentiated by virtue of their knowledge in the field of data processing systems and in the field of telegraphic switching and signalling.

Among these technicians we must therefore find an individual who--apart from the hardware of the system and assuming that it works because the others have already checked it out--will focus his attention on the tasks of switching and dialogue between exchanges.

In other words, this new person of the "switching operator" will have to be able to consider electronic automatic switching as a closed box into which enter and from which leave a certain number of wires (the lines), checking their operational performance and concentrating on switching.

3. Evaluation Parameters in Certifying a Numerical Automatic Switch

A common feature among SPC (storage program control)automatic switches is the feature of memorization of a certain quantity of data pertaining to the connections, some in a temporary fashion and others in a permanent manner.

3.1. Data Phrases in EDS System

The EDS System memorizes various types of information in the form of "phrases" put into the central memory.

There are three types of phrases and they are distinguished by the content of the first four bits which provide the identification key for them.

(A) Phrases Referring to Switching

(B) System Phrases

(C) Phrases Caused by Immissions and Emissions in the Operator Console

(A) Phrases Referring to Switching

These are phrases which describe a connection and which are broken down in to CRJ (Connect Record Journal) phrases or phrases describing the phases of building up a connection, and DRJ (Disconnect Record Journal) phrases or phrases which describe the conclusion of a connection.

A connection which has ended properly is described by a pair of phrases CRJ/DRJ, while a connection, for which the caller was unable to reach the data transmission phase, is described only by the phrase CRJ.

(a1) CRJ Phrase (Figure 4)

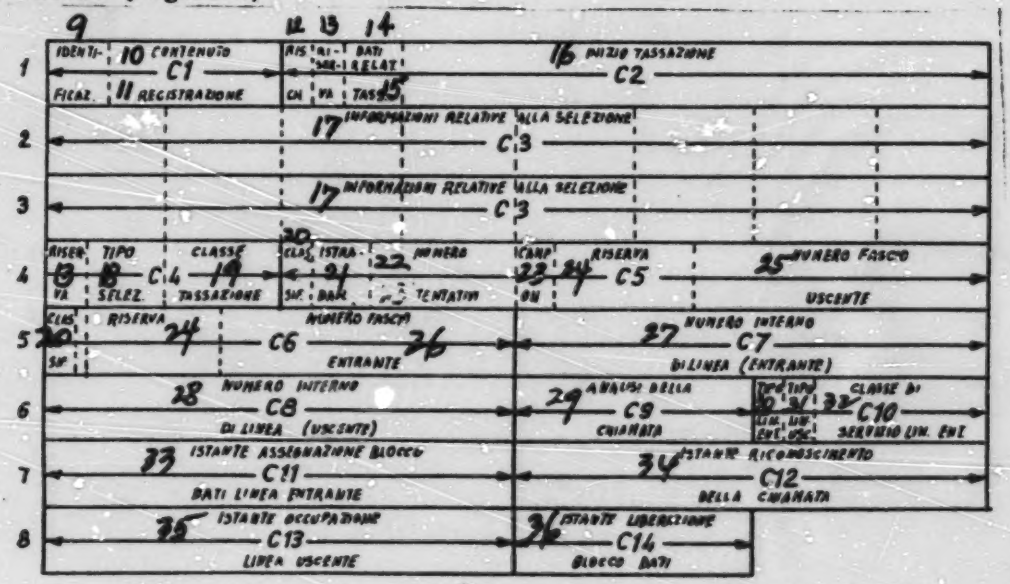


Figure 4. CRJ Phrase. Key: 9--Identification; 10--Content; 11--Registration [recording, storage]; 12--Search; 13--Reserve; 14--Pertinent data; 15--Rate determination; 16--Start of rate or charge determination; 17--Data pertaining to selection; 18--Type of selection; 19--Rate schedule class; 20--Classification; 21--Routing; 22--Number of attempts; 23--sampling; 24--Reserve; 25--Number of outgoing line groups; 26--Number of incoming line groups; 27--In-house number of (incoming) lines; 28--In-house number of (outgoing) lines; 29--Call analysis; 30--Type of incoming line; 31--Type of outgoing line; 32--Class of service, incoming line; 33--Instant of incoming line data block assignment; 34--Instant of call recognition; 35--Instant of outgoing line occupation; 36--Instant of data block release.

The phrase CRJ, used during the buildup of a connection, lasts 31 bytes which can be memorized completely or only in part, depending upon whether or not the statistics have been provided for the center.

The recorded data can furnish a "story" describing the buildup of the connection if it worked properly or, otherwise, the story of the entire connection.

(*)--Information items memorized only when statistics are provided for the Center.

Among the various information items we as a matter of fact have the following:

The in-house number of the line (ILN) on which the call is recognized, the type* of lines, possibly the number and the type of line group to which it belongs and the instant* at which the call is recognized and its possible chargeability in terms of rates.

The instant* at which a data block is associated with the line coincides practically with the instant at which the invitation to dial is transmitted.

The dialing digits and the type of dialing.

Outcome of routing, number of attempts made to build up the connection.

Outgoing ILN, its type, possibly number and type of line group to which it belongs.

Instant* of outgoing line occupation.

If the connection worked well, the instant at which the charge time starts--whereas, if the connection was not put together, the instant* of line release and, in this case, the cause* that led to the release prior to the completion of the connection build-up.

(a2) Phrase DRJ (Figure 5)

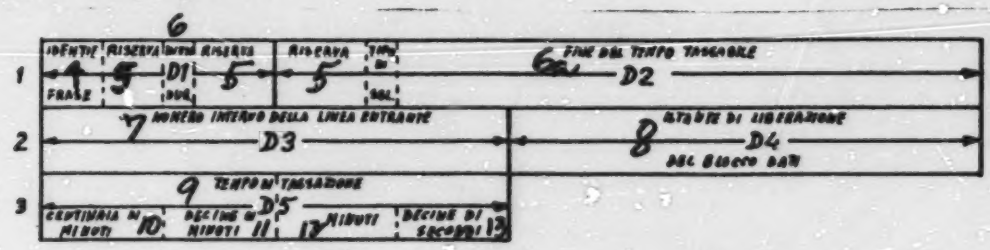


Figure 5. Phrase DRJ. Key: 1--Phrase identification; 5--Reservation; 6--Sending duration; 6a--End of chargeable time; 7--In-house number of incoming lines; 8--Instant of data block release; 9--Charging time; 10--Hundreds of minutes; 11--Tens of minutes; 12--Minutes; 13--Tens of seconds.

The phrase DRJ, used by the switching program during the phase of releasing a connection which has been made has a duration of 10 bytes during which information items on the call are memorized:

The calling ILN, used as the key for interconnection among connection build-up phrases and release phrases.

Chargeability or nonchargeability of call and, if yes, duration transmitted to caller;

Instant of end of chargeable time;

Instant of release of data blocks associated with calling line.

(b) System Phrases (Figure 6)

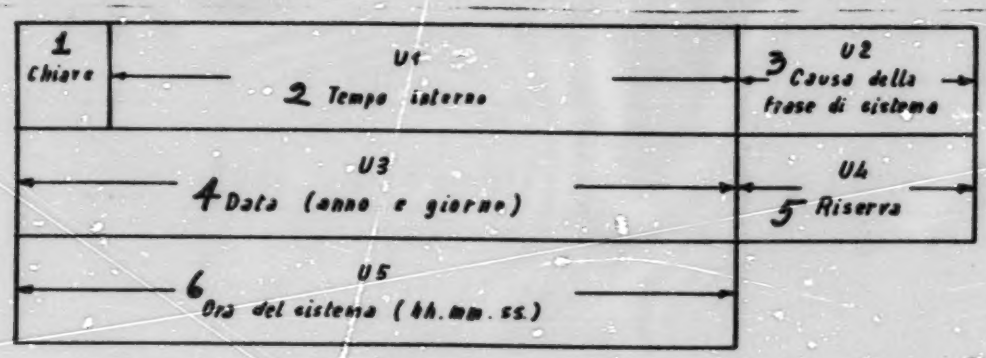


Figure 6. System phrases. Key: 1--Key [button]; 2--In-house time; 3--Cause of system phrase; 4--Date (year and day); 5--Reservation; 6--System time (hours, minutes, seconds).

These are phrases which are memorized by the system in special situations, that is, when there has been a particular event which influences the various other registrations [recordings] and which must therefore be taken into consideration.

Such special events are as follows: restart, newstart, and date [data] change.

They influence the data memorized either due to the effect which they have upon switching (RE/NEW) of due to the resetting of the daily [journal] clock which is used in determining all memorized times (date change).

We must as a matter of fact keep in mind that restart completes the connections during the build-up phase and during the release phase and that newstart also interrupts the connections which are in progress; the consequence of this will be that not even the CRJ relative to the connections in the build-up phase will be memorized and that, regarding connections in the release phase, no DRJ will be memorized and hence the system phrase will have to be used as DRJ.

The phrases in question have a fixed duration of 11 bytes and--in addition to the key that identifies them as such and their motivation--they contain information on the instant at which materialized the cause that motivated them, the date, and the hour [time] of the system.

(c) Phrases Caused by Immissions and Emissions in the Operator Console (Figures 7-8)

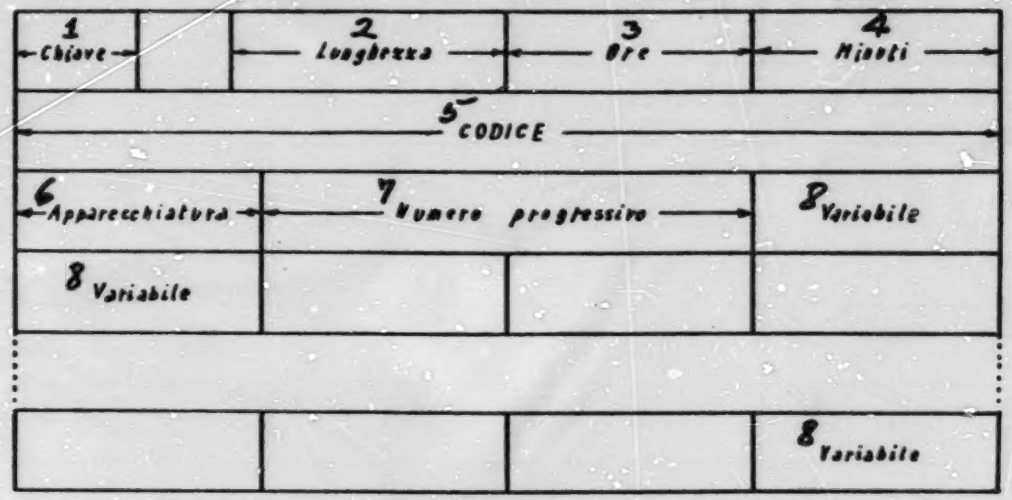


Figure 7. Immission Phrases. Key: 1--Key [button]; 2--Duration; 3--Hours; 4--Minutes; 5--Code; 6--Equipment; 7--Progressive [sequential] number; 8--Variable.

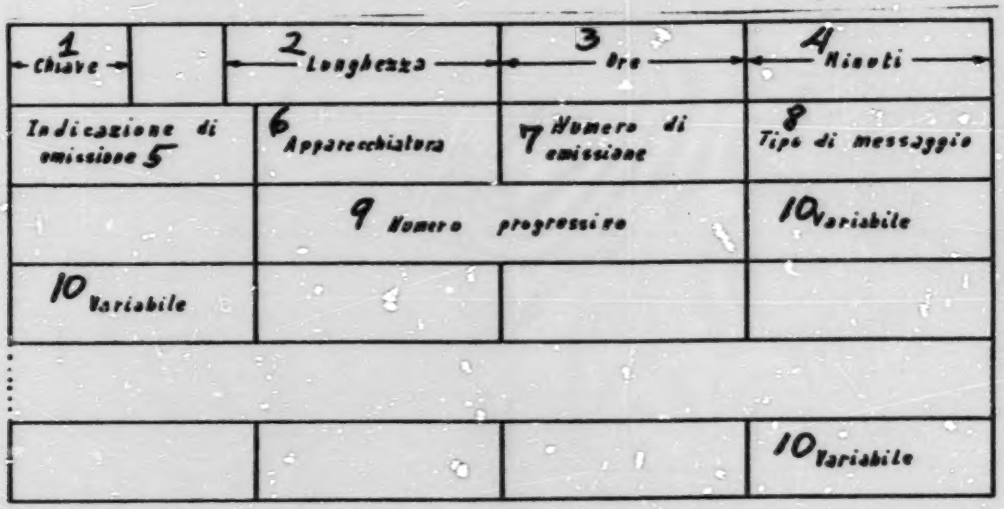


Figure 8. Emission Phrases. Key: 1--Button; 2--Duration; 3--Hours; 4--Minutes; 5--Indication of Emission; 6--Equipment; 7--Number of emission; 8--Type of message; 9--Sequential number; 10--Variable.

These phrases are generated when, at the operator console, there takes place any operation involving the reading or variation of data fields through an operator "code" that establishes the type of operation and the field (or fields) to be handled.

This type of phrases has a variable duration since, in addition to the fixed information items, such as immission (emission) apparatus, the time at which the operation was started, the sequential message number, it also contains the code given and the variables which will guide the program that will have to run the input/output operation. Therefore, in addition to all of the information items provided, the duration of this phrase is also memorized at the start of this phrase.

3.2. Disc Unit for Memorizing Phrases Given

The EDS system uses four disc units to guarantee the availability of support for the registration [recording, storage] of phrases given; these units are subdivided into two groups:

Pair of CRJ units for normal handling of registration;

Pair of service units for handling in case of necessity, when the two CRJ units are momentarily not usable for registration.

3.2.1. Structure of Data Support (Figure 9)

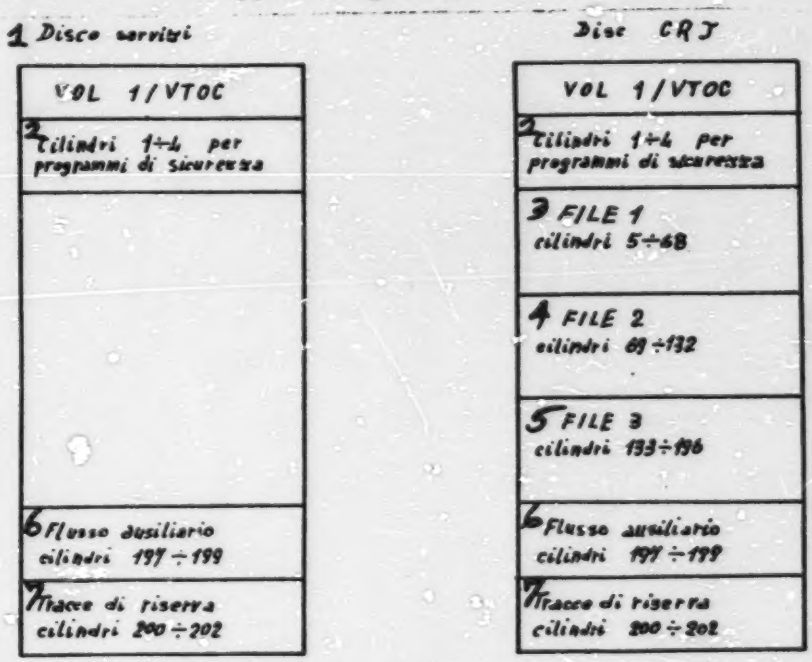

1 Disco servizi
VOL 1/VTOC
2 cilindri 1÷4 per programmi di sicurezza
6 Flusso ausiliario cilindri 197÷199
7 Tracce di riserva cilindri 200÷202
Disc CRJ
VOL 1/VTOC
2 cilindri 1÷4 per programmi di sicurezza
3 FILE 1 cilindri 5÷68
4 FILE 2 cilindri 69÷132
5 FILE 3 cilindri 133÷196
6 Flusso ausiliario cilindri 197÷199
7 Tracce di riserva cilindri 200÷202

Figure 9. Structure of CRJ disc and auxiliary rows and of service disc.
Key: 1--Service disc; 2--Cylinders 1-4 for safety [backup] programs; 3--Row 1, cylinders 5-68; 4--Row 2, cylinders 69-132; 5--Row 3, cylinders 133-196; 6--Auxiliary flow, cylinders 197-199; 7--Reserve tracks, cylinders 200-202.

The CRJ discs used are set up in the following manner:

Four cylinders available to the system;

Three rows of 64 cylinders for memorizing data in a normal situation;

One auxiliary row with three cylinders for memorizing data after emergency conditions have arisen. This latter flow--with the same dimensions and the same position on the disc--is again generated also in the pair of service discs.

3.2.2. Structure of Rows (Figure 10)

VOL1	Standard volume label [ticket]
HDR1	No 1 flow start standard label
HDR2	No 2 flow start standard label
UHL1	
.	
.	User lables, 1-8
.	
UHL8	
TM	Separation marker
Call data block	
Call data block	
.	Call data (duration of block =3,520
.	bytes)
.	
Call data block	
TM	Separation marker
EOF1	Flow-end standard label
EOF2	No 2 flow-end standard label
UTL1	User-end label
TM	Double separation marker
TM	

Figure 10. Structural organization of a row.

Every row on a disc has an initial area in which are memorized labels [tickets] for the volume, the start of flow, and the user, followed by data blocks.

Particularly interesting are the UHL user labels which, among the various information items, contain the following (Figure 11):

Number of UHL,
Number of center,
Date,
Direction of start and direction of end of flow,
Number of current flow, number of successive flow,
Instant of closing of labels [tickets],
Information on period of registration time relating to this memorization.

U	H	L	Nr. di etichetta (1) (1 - 8)

b) Campo dati (80 B):

U	H	L	Nr. di etichetta (1 - 8) (1)
Numero di FDS (1 + 99) (2)		Data (2)	
(3) Data	Emissione di completamento (4)	Nr. del flusso attuale (5)	Nr. del flusso precedente (6)
Nr. del flusso seguente (7)	Riserva (8)	Numero di archivio del (9)	
disco precedente (10)			
Indirizzo di inizio C 11	H	R	Indirizzo di fine C 12
H	R	Ora d'inizio (100 ms) 13	
	Ora di fine (100 ms) 14		

Figure 11. Structure of UHL utilization labels [tickets]. Key: 1--Number of label [ticket]; 2--Number of EDS; 3--Date; 4--Completion emission; 5--Number of current flow; 6--Number of preceding flow; 7--Number of next [following] flow; 8--Reservation; 9--File number of; 10--Preceding disc; 11--Direction of start C; 12--Direction of end C [call]; 13--Starting time (100 ms); 14--Termination time (100 ms); (b) Data field (80 B).

The UHL refers to the maximum registration of one day and to it refer all of the data blocks which follow the area of labels [tickets] and which are comprised between the initial direction and the final direction memorized in the UHL itself.

We want to recall here also briefly the organization of these data blocks, consisting of a head containing the date and time of memorization and the quantity of significant data (Figure 12).

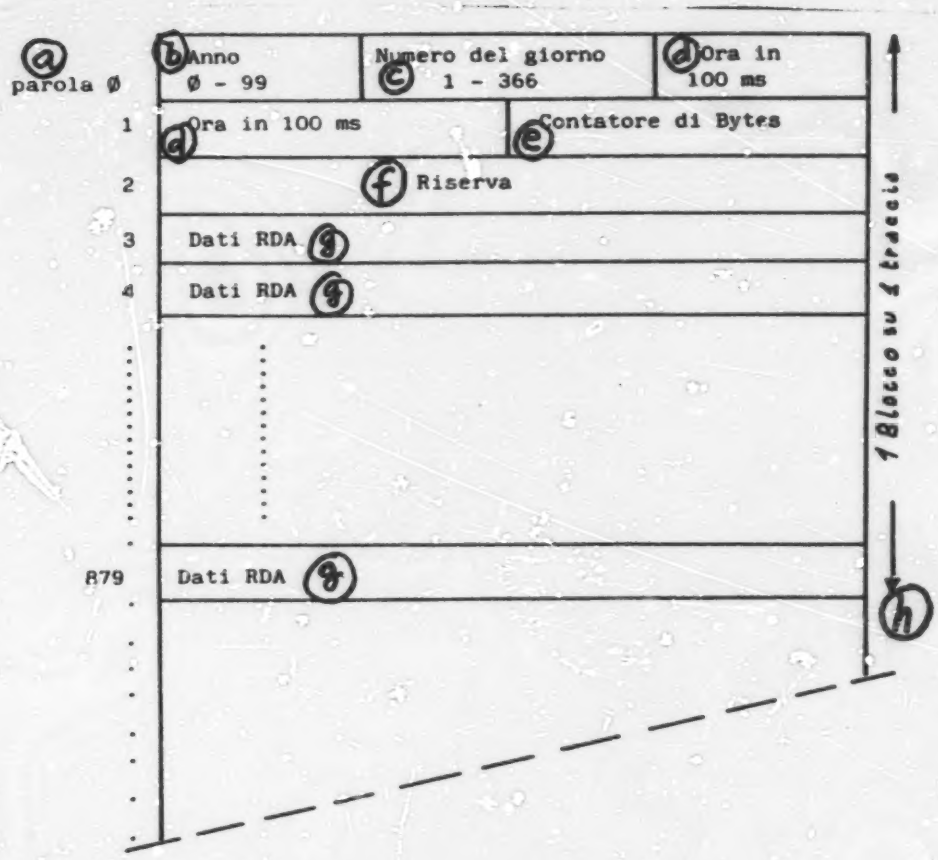


Figure 12. Structure of a data block for a call. Key: a--Word; b--Year; c--Number of days; d--Time in 100 ms; e--Byte counter; f--Reservation; g--RDA data; h--One block on one track.

3.3 Memorization of Data on Disc

The data phrases used and described in programs from which they can be retrieved are memorized by the system in a buffer pair in a central memory. These areas are used in tandem and they are dimensioned in such a way as to make optimum use of the disc; two buffers as a matter of fact occupy one track of the CRJ disc.

The program handles the transfer of data from the central memory to the disc, continuing up to the point when the area provided for the recording flow is complete or when all of the utilizer labels are described or finally when the flow on the part of the operator has been closed down.

After this has happened, the completed flow or the closed flow can be transferred on tape for processing by the computer center which takes care of the computation of the charges to be billed.

If, for some reason, the three regular flows are closed and none of the three of them were declared free for registration [recording], the system would continue the memorization of data on the auxiliary flow of the service disc.

This memorization is interrupted automatically when at least one flow of the CRJ disc is released and is declared free for recording; the system as a matter of fact closes the auxiliary flow down, it transfers it to the corresponding [flow] of the CRJ disc and starts memorization on the released rows.

It should be noted that the system is programmed in such a way as not to lose any CRJ data; as a matter of fact, if there is a case in which, in addition to the three regular flows, the auxiliary flow of the service disc must also be closed down, the CRJ and DRJ phrases are recorded in the two memory buffers until both of them are completed, in other words, they are tied in with them in such a way that they are no longer usable and, when they are fully used up, the system no longer accepts any calls.

4. Assumptions on Procedure for Approving a Numerical Automatic Switch

Checking out a numerical automatic switch for approval might be accomplished in the following three different phases:

(a) Hardware activation phase;

(b) Static checkout phase for system (or on-line checkout);

(c) Dynamic testing phase (or off-line testing).

This institute's switching and signalling laboratory is conducting an experiment to check out what we have just said. For this purpose we have set up a testing station to conduct tests of the first EDS centers installed in Turin and Milan. The testing station is made up of the following:

Two console teletypes with 100 baud conducting a dialog with the EDS exchange processing unit in Milan;

Two user teletypes with 50 baud, constituting two user stations remote from the EDS exchange in Milan;

One user teletype linked to the Pentatelex electromechanical exchange in Rome; a telephone service unit;

A Selenia GP 160 mini-processor equipped with:

Video [screen],
Fast Logabax printer,
Fast tape reader and punch,
Two Ampex magnetic tape units,
Two disc units at 5 Mbytes.

We will not describe phase (a) for hardware activation since it has little to do with the tasks of the switching operator.

4.1. Static System Checkout (On-Line)

It has been called static since it is done in the absence of traffic and since the purpose is to evaluate the output of the system by performing a whole series of tests that would not be possible in the presence of traffic. We must as a matter of fact put out of service some units of the system and analyze the performance of the entire center; we must cause the breakdown of the entire system; we must perform the initial system charge; we must check out the conversation between the various units and subunits; we must simulate breakdowns and have the system search, analyze, and possibly eliminate those breakdowns; we must reconstitute the system, etc.

This phase is carried out mostly from the console and we confine ourselves to a conversation between man and machine; the advantage here is that it can also be done in a remote fashion.

The EDS center is run from a console complex which can be used not only to get information on the state of the system and the peripheral units but also to vary that state. This kind of management is accomplished through the use of a series of "codes" which enable the computer to interpret the various requests, to read the corresponding fields, and to start the respective transmissions [emissions].

Concerning the centralized portion, we can thus obtain information on the configuration of the center, on the state of the central units, of the peripheral units, be they peripheral apparatus such as disc units, tape units, and system console, or the periphery on the side of the lines, including lines which are tied in to the operating console.

If we focus our attention on that part of the information items concerning the management of the lines and hence switching, we can obtain a considerable quantity of information items regarding the structure of the center from the external viewpoint--that is, single user lines, multiple stations, junction groups, makeup of groups, association of junctions with groups themselves, types of junctions, etc.

Concerning the structure of the center itself from the practical application software viewpoint and hence the in-house organization of the switching operation, we have the routing tree, the list of channels corresponding to a recognized prefix, the list of groups, the accessibility and possible sections added to the selection [dialing] recognized for the reconstruction of the selection [dialing] to be retransmitted, etc.

This type of information we might call "static" information since it is variable only through direct intervention from the operator's console; along with that we have a whole series of information items that be called "dynamic."

In this way we can check on the state of a line or of all lines in a group; we can have a list of all lines with fixed-start or fixed-stop polarity disturbances, or

lines that are blocked on the incoming end or the outgoing end, or safety [backup] software, or, finally, all lines that are not tied in. In addition to all of these instantaneous information item transmissions [emissions], the center is thus able to transmit, on request, a series of data of the statistical type, with a time and day rhythm.

From the console, the operator can request the transmission of such data for one or more groups which he wants to check on, for a maximum of 24 groups simultaneously.

At an hourly rhythm, in addition to the number of connections made during the particular hour, the number of calls recognized incoming, the number of calls processed outgoing from the center, we can then obtain a series of information items for each of the groups being checked out, including the number of active lines, the number of fixed-start or fixed-stop trouble lines, etc.

Exchange traffic data pertaining to the entire day are furthermore transmitted at day-change time.

This fixed series of data can be joined by instantaneous information on the traffic handled by the exchange so that we are able to observe the exchange's work load; the main information items obtainable in this way pertain to the following:

Number of connections in progress,
Number of communications in buildup or release phase.

4.2. Dynamic Checkout (Off-Line Inspection)

On a statistical basis, we examine the data recorded by the center, both in a normal operating condition and under special simulated conditions.

We have seen the possibility of getting from the center--by using the operator's console--a really noteworthy volume of information items to check on the activity state and to check on the center itself as well as the lines tied in with it.

To complete the series of these information items, we still need a series of data summarizing the total traffic handled by the center, the type of traffic generated and in transit, whether and how this traffic has been generated and serviced by the center and what part of it has been properly handled.

To get this series of information items, we tried to process the considerable volume of data reported on disc and at the output of the center in the form of "rows" on tape.

The tapes are read by the miniprocessor model GP 160, while a properly developed program processes the data contained in the individual CRJ and DRJ phrases.

This is why we took a series of definitions as a point of reference.

Duration of a connection: time interval between the instant of call recognition and the instant of calling line release;

Duration of connection build-up:

*For successful connections: time interval between instant of call recognition and instant of connection signal recognition (or forwarding [processing]).

For the r-mo connection:

$$(1) \quad D_r = (C2)_r - (C12)_r \quad \text{if } (C2)_r > (C12)_r$$

or

$$(2) \quad D_r = 24 + (C2)_r - (C12)_r \quad \text{if } (C12)_r > (C2)_r$$

We must keep in mind that, out of field C2, we must take only the 16 bits which are least significant (the last ones), with C2 and C12 constituting two homogeneous magnitudes but with different degree of definition.

*For unsuccessful connections:

Time interval between instant of call recognition and instant of recognition (or processing) of release signal.

From the two definitions given above we can get the value of the average duration of building up a connection within a span of 24 hours.

$$(3) \quad \bar{D}_{TE} = \frac{\sum D_r}{N_E}$$

where N_E represents the number of calls between midnight of one day and midnight of the next day.

Average Duration of Connection:

Time interval between instant of call recognition and instant of release signal recognition.

For successful connections:

$$(4) \quad D_{cr} = (D2)_r - (C12)_r$$

or:

$$(5) \quad D_{cr} = 24 + (D2)_r - (C12)_r$$

under the usual conditions; we furthermore must keep in mind that D2 is homogeneous with C2 so that the earlier observations still apply.

For unsuccessful connections, we have the following:

$$(6) \quad D_{cr} = D_r$$

where D_r is calculated as in 1 or 2.

From the definition of D_{cr} we can tell that the average duration of connection build-up over a period of 24 hours is:

$$(7) \qquad \bar{D}_c = \frac{\sum D_{cr}}{N_E}$$

where N_E has the meaning defined in the preceding point.

Traffic in Groups

Traffic in outgoing groups

Let group F_i be made up of N_i junction lines (outgoing). Let N_i be a plant parameter.

Assuming that, at a certain time of day (0, 1, 2--23) line N_r ($0 \leq r \leq s$) of line group F_i is taken up for x_r minutes of use, we define the traffic of group F_i as follows:

$$(8) \qquad A_{i,h} = \frac{\sum_{r}^{s} x_r}{N_i} \cdot \frac{1}{60}$$

where h = 0, 1, 2--23, pertaining to the time of day h and where:

$$(9) \qquad x_r = (D4)_r - (C13)_r \quad \text{if } (D4)_r \geq (C13)_r$$

or:

$$(10) \qquad x_r = 24 + (D4)_r - (C13)_r \quad \text{if } (D4)_r < (C13)_r$$

for successful connections.

For unsuccessful connections we have the following:

$$(11) \qquad x_r = (C2)_r - (C13)_r \quad \text{if } (C13)_r < (C2)_r$$

or:

$$(12) \qquad x_r = 24 + (C2)_r - (C13)_r \quad \text{if } (C2)_r < (C13)_r$$

Traffic on Incoming Groups

Let line group N_j be made up of N_j junction lines (in-coming). Let N_j be a plant parameter.

In analogy to what we described for traffic on outgoing groups, we have the following:

$$(13) \qquad A_{j,h} = \frac{\sum_{0}^{s} {}_{r} X_{v}}{N_j} \cdot \frac{1}{60}$$

where:

$$(14) \quad x_r = (D4)_r - (C12)_r \quad \text{if } (C12)_r < (D4)_r$$

or:

$$(15) \quad x_r = 24 + (D4)_r - (C12)_r \quad \text{if } (D4)_r < (C12)_r$$

What we said above applies to successful connections. The following however applies to unsuccessful connections.

$$(16) \quad x_r = (C2)_r - (C12)_r \quad \text{if } (C12)_r < (C2)_r$$

or:

$$(17) \quad x_r = 24 + (C2)_r - (C12)_r \quad \text{if } (C2)_r < (C12)_r$$

Line Group Efficiency

Let us define the efficiency of a line group F_i (outgoing) as the ratio between the number of successful connections and the number of calls processed on them.

$$(18) \qquad E_i = \frac{\sum N_{COR}}{\sum N_{CHTE}}$$

The bit 0 of field C2 indicates whether the call was successful (bit 0 = 0) or whether it was unsuccessful (bit 0 = 1).

Peak Traffic

This parameter is very important for an inspector since it makes it possible to check on the correct dimensioning of the component parts of the exchange, so as to guarantee satisfactory service to the user. The method we propose differs from the recommendations of CCITT on that score and, although it does not yield any

different results, it on the contrary offers the possibility of better definition (detailed to the first minute, rather than the quarter hour):

We consider the number of calls, minute by minute, and within a span of 60 successive minutes. The traffic during that hour can be figured out by making reference to the average duration of the connection calculated as seen earlier; that figure might be A_0.

The number of calls in the successive minutes, we assume, may be added to that of the preceding 59 minutes; the corresponding traffic value would be A_1.

Since we used N_i for the number of calls at the i-th minute, the traffic volume A_0 serviced by the center during the first 60 minutes will be:

$$(19) \qquad A_0 = \bar{D}_c \sum_{0}^{59} {}_i\, n_i$$

And analogously:

$$(20) \qquad A_1 = \bar{D}_c \sum_{1}^{60} {}_i\, n_i$$

$$\vdots$$

$$(21) \qquad A_r = \bar{D}_c \sum_{r}^{r+59} {}_i\, n_i$$

The relationship which links the A_r (with r being any number but > 0) therefore is of the following type:

$$(22) \qquad A_r = A_{r-1} + \bar{D}_c(a_{r+60} - a_{r-1})$$

Developing equation (7) as a matter of fact, we get the following:

$$(23) \qquad A_0 = \bar{D}_c(n_0 + n_1 + \dots + n_{59})$$

$$(24) \qquad A_1 = \bar{D}_c(n_1 + n_2 + \dots + n_{59} + n_{60})$$

and hence:

$$(25) \qquad A_1 = A_0 - \bar{D}_c n_0 + \bar{D}_c n_{60}$$

or also:

$$(26) \qquad A_1 = A_0 + \bar{D}_c(n_{60} - n_0)$$

Analogously:

$$(27) \qquad A_2 = A_1 + \bar{D}_c(n_{61} - n_1)$$

Proceeding inductively, we generally have the following:

$$A_r = A_{r-1} + \overline{\overline{D}}_c (n_{r+59} - n_{r-1}) \quad (28)$$

Which precisely expressed equation (22).

The maximum of the A_r within a span of 24 hours examined represents the maximum traffic hour [time] and gives us the relative value for it.

To give equation (22) a more immediate form, it is necessary to transform it in such a manner as to permit an expression in terms of traffic hours (that is to say, Erlang).

Thus setting up:

$$\overline{\overline{D}}_c = \frac{\overline{D}_c}{3600} \quad (29)$$

Equation (22) is transformed into the following

$$A_r = A_{r-1} + \overline{\overline{D}}_c (n_{r+59} - n_{r-1}) \quad (30)$$

Starting with the definitions given above, we processed the tapes, organizing the data so as to obtain:

A series of tables showing traffic on incoming and outgoing line groups whose data represent the hours [time] of occupation of lines belonging to each group in the individual hours of the day.

A table indicating the efficiency of the groups during the individual hours of the day;

The average duration of building up a connection, calculated as the ratio between the sum of corresponding durations and the total number of recognized calls;

Average duration of a connection calculated as the relationship between the sum of the corresponding durations and the overall number of calls recognized;

For the peak traffic, we have an indication here of the minute as of which the maximum number of calls was recognized within an interval of 60 successive minutes and the corresponding traffic volume as a product of the number of such calls multiplied by the average duration of a connection;

Type of traffic: the calls were subdivided, on the basis of the type of selection [dialing] recognized, as follows: local, national (toward a national junction), international; the product of these numbers of calls by the average duration of a connection will give us the values for the types of corresponding traffic;

Successful and unsuccessful connections: here we have a direct report of the values from the corresponding call counters;

Degree of network loss: the figure given out represents the ratio between the number of unsuccessful calls and the total number of calls recognized;

Direct traffic and overflow traffic: here we directly get the figures from the counters on the call routed either directly or via detour;

Fictitious traffic: we consider all of the calls which were unsuccessful to be fictitious traffic. They are subdivided into four headings, grouping the cases of disconnection [release] relative to the connection build-up phase on the incoming side or the outgoing side and further distinguishing the causes due to the line (or the remote exchange or the user) from those due to the center.

We must keep in mind that the most varied reasons, which may bring about and consequently cause fictitious traffic on the network, must be better detailed, so as to permit a very thorough qualitative and quantitative analysis.

Combining the most disparate causes, which bring about fictitious traffic at the exchange's input, would often not enable us to come up with an objective judgment and hence with the proper kind of corrective action. The case in which, for example, the user does not dial within the proper time or does not dial correctly, is different from the case where the caller is disconnected following the determination, by the center, that it does not have means available for handling that call.

This will be the subject of a second phase of experimentation which is now being prepared.

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25 November 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 190

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WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 190

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BRIEFS

SWEDISH EQUIPMENT TO VENEZUELA, EGYPT--LM Ericsson has gotten a big order--630 million kronor's worth--from Venezuela. The order, which concerns supplying and installing automatic telephone systems of the AXE type, is one of the biggest single orders LME has ever gotten. Practically all of the equipment involved in the order will be manufactured in Sweden, but no new hiring is in prospect. Besides the big order from the telephone administration in Venezuela, LME has gotten an order from Egypt. The order runs to some 180 million kronor and concerns shipments of equipment for manufacture of telephone exchanges and instruments over a 3-year period. LM Ericsson's automatic telephone systems are now to be found in some 30 countries worldwide. [Text] [Stockholm DAGENS NYHETER in Swedish 15 Oct 81 p 24] 8815

KCNA', 'CTK' SIGN AGREEMENT--Pyongyang, 10 Nov (KCNA)--An agreement on the exchange of information and mutual cooperation between the KOREAN CENTRAL NEWS AGENCY and the CTK NEWS AGENCY of Czechoslovakia was signed in Pyongyang on November 9. Present at the signing ceremony on our side were Kim Song-kol, general director of the KOREAN CENTRAL NEWS AGENCY, and personages concerned and on the opposite side were the members of the delegation of the CTK NEWS AGENCY of Czechoslovakia headed by its general director Otakar Svercina and Czechoslovak Ambassador to our country Josef Hadravek. The agreements was signed by General Director Kim Song-kol and General Director of the CTK NEWS AGENCY Otakar Svercina. [Text] [SK092245 Pyongyang KCNA in English 2233 GMT 9 Nov 81]

ITALY, CHINA RADIO-TV AGREEMENT--Italy and China have signed a cooperation agreement in the field of radio and television. The agreement was signed by Italian Radio President Sergio Zavoil and by the chairman of Chinese radio and television. It provides for an exchange of radio and TV programs and delegations and for an examination of the possibilities of coproduction. Zavoli has spoken positively about the agreement, which strengthens the links between the two countries. When the agreement was signed the Chinese expressed their desire to take part, for the first time, in the Italian prize competition in 1982. [Text] [LD090154 Rome Domestic Service in Italian 2300 GMT 7 Nov 81]

CSO: 5500/2040

BRIEFS

'VNA', 'BERNAMA' NEWS AGREEMENT--Hanoi, 12 Nov VNA--An agreement on exchange of news reports between VIETNAM NEWS AGENCY and its Malaysian counterpart BERNAMA was signed in Kuala Lumpur on Tuesday with a view to promoting understanding between the two countries. Signatories were VNA's Director-General Dao Tung and BERNAMA's Director-General Ahmad Mustapha Hassan. The signing ceremony was witnessed by Vietnamese Ambassador Vu Bach Mai and BERNAMA's leading officials. [Text] [OW121836 Hanoi VNA in English 1506 GMT 12 Nov 81]

CSO: 5500/2043

PT&T MINISTER OPENS NEW TELEPHONE EXCHANGE

Dacca THE BANGLADESH OBSERVER in English 30 Sep 81 p 12

[Text] Gazipur (Dacca) Sept. 29--A 600-line automatic telephone exchange was inaugurated here today by Mr. A. K. M. Mayeedul Islam Minister for Posts, Telephones and Telegraphs.

Presided over by Mr. M. Habibullah MP the colourful inaugural function was also addressed by Mr. A. B. M. Taher Chairman T and T Board Mr. A. R. Saber and Mr. Abdus Sattar.

Speaking on the occasion the Minister said that eight more telephone exchanges with 200 lines each would be set up in the country during the next year. He said efforts were being made to introduce electronic telephone exchanges in the big cities within the shortest possible time.

Mr. Islam said the whole country would be brought under nationwide dialing system within 1983. About the T and T Staff College at Joydevpur the Minister said it would be completed on schedule. Students from both home and abroad would receive training here, he said.

The Minister said the Gazipur telephone exchange was a commitment made by the Acting President Justice A. Sattar when he was Vice-President. He said arrangement would be made to convert the Gazipur exchange into STD system within a couple of years.

He expressed his thanks to the workers and officials of T & T Telephone Shilpa Sangstha (TSS) and Cable Shilpa Sangstha for their wholehearted support and hard work for the new exchange at Gazipur.

CSO: 5500/7017

INDIA AIDS THIRD WORLD IN COMMUNICATIONS PROJECTS

Bombay THE TIMES OF INDIA in English 28 Sep 81 p 11

[Text] New Delhi, September 27--The expanding communications infrastructure in vast parts of the developing world increasingly bears the stamp of Indian expertise.

Across the Gulf, in West Asia, in West Africa and in East Africa, Telecommunications Consultants India Ltd. (TCIL) is providing consultancy services for the installation, operation and maintenance of the latest telecommunications systems.

In just two years after its establishment, this public undertaking has its order book full, with Rs. 21 crores worth of contracts which will result in a net inflow of 60 per cent of the amount in foreign exchange.

Enriched by this experience and expertise in working in different countries, TCIL is now venturing into more competitive markets in Latin America and South-East Asia.

Mr. M. P. Shukla, chairman of TCIL, told newsmen here that in the last two years the company had won 37 contracts in global tenders worth Rs. 27 crores. This increased the turnover five-fold in a single year to reach Rs. 7.87 crores, fetching a profit of Rs. 1.2 crores. A dividend of 10 per cent accruing to the national exchequer on a paid-up equity capital of Rs. 20 lakhs is proposed to be declared.

Ex-Gratia Payment

He also announced a 10 per cent ex-gratia payment to employees drawing Rs. 1,600 and less a month.

TCIL has been engaged by the Yemen Arab Republic to set up an underground cable plant in five towns, install 40,000 telephone connections and organise a subscriber relations cell.

In Nigeria, TCIL trains technicians and is consultant for maintenance and operation of telecom services. About 400 Nigerians are to come here for advanced training.

Kenya, Mozambique, Zimbabwe and Libya are among the countries with whom negotiations are in progress. In Kuwait, TCIL outbid some of the world's biggest firms in the field of electronics to provide consultancy services for the installation and maintenance of electronic private automatic exchanges. The contract is worth Rs. 1 crore.

Consultancy Services

In Oman, TCIL is providing consultancy services for the installation, operation and maintenance of telephone exchanges and laying of transmission lines.

The public undertaking has not concentrated all its operations abroad. With its staff mostly professional engineers of various disciplines, the company has undertaken contracts at home too, for pipeline communications in oil exploration, coal fields, hydro-electric power projects and the hotel industry in the public sector.

According to Mr. Shukla, new marketing strategies are under study on the basis of reports submitted by teams sent to African, South-East Asian and Latin American countries.

To enable its engineers to keep abreast of the latest advances in communications technology, TCIL would send abroad some of them for training in computerised systems.

CSO: 5500/7011

INFORMATION MINISTER HOLDS PRESS CONFERENCE

Benefits of Satellite

Bombay THE TIMES OF INDIA in English 26 Sep 81 p 5

[Text] New Delhi, September 25--INSAT, the first Indian communications satellite, will provide TV service during its seven years in orbit from next year to 15,300 electrified villages in six states covering a total of 18 districts.

Entailing a capital expenditure of Rs. 69 crores, the seven-year programme will extend TV service to three districts in each state.

Announcing this at a press conference today, Mr. Vasant Sathe, information and broadcasting minister, said that the INSAT TV programmes would be entirely rural-oriented, different from those shown in cities, except for nationally-important items which would be telecast from all TV stations.

INSAT would be used to link all TV centres. The centres would be linked by microwave transmission facilities and up-linking facilities would be provided at the Delhi and Shillong earth stations. There would be one transportable earth station with TV capability.

Satellite relay receivers would be installed at all TV transmitting centres for receiving and relaying the common national programmes as well as news and sports events. A network of relay stations would be set up for transmitting up to a radius of 100 km.

The normal daily INSAT TV programmes would be predominantly educative and functional: how to raise farm productivity, participation in extension activities, focus on public health and family welfare programmes, promotion of social justice and scientific temper and sports and games.

The programmes would be of one-hour duration in the evening. There would be a 45-minute educational service in the morning. For the preparation of programmes, new programme production centres equipped with field equipment would be set up at Kurnool, Sambalpur, Ranchi, Rajkot, Nagpur and Gorakhpur.

Up-link facilities would be provided at each of these centres for feeding the satellite. Expansion of production facilities in Hyderabad and Cuttack would be given priority.

Color Television Plans

Bombay THE TIMES OF INDIA in English 26 Sep 81 p 5

[Text] New Delhi, September 25--A switch-on to colour TV may be accomplished before the Asiad in November next year.

Mr. Vasant Sathe, information and broadcasting minister, held out this hope to newsmen this evening. It all depended on whether the Union cabinet approved the proposal next month.

Currently a study group--the fifth set up so far to go into this question--was investigating the "colour compatibility" of the project. Its recommendations would be submitted next month.

TV manufacturers were of the view that the demand for colour TV sets would be much more than what had been estimated by the working groups, he said.

Three powerful outdoor broadcasting vans were being imported for transmission of the Asiad events. Later, these would be placed at the disposal of the Amritsar-Jullundur TV link and the Calcutta TV centre for use in the border areas.

CSO: 5500/7009

NEW SATELLITE TO HELP DISASTER WARNING SYSTEM

New Delhi PATRIOT in English 30 Sep 81 p 5

[Text]

The disaster warning system of the Meteorological Department will become perfect and more rapid when it starts using the Indian National Satellite (INSAT) scheduled for launch in April next year, reports UNI.

The department will be ready by February next with all the ground equipment necessary for utilising the meteorological payloads to be provided by the satellite.

According to Director-General Meteorology P K Das, the satellite will ensure that the department is not hampered by atmospheric conditions or break-down in telecommunications in disseminating the warning in time.

The department is spending about Rs 19 crore in setting up a Meteorological Data Utilisation Centre in New Delhi, 110 data collection platforms in land and sea all over the country, for installation of 100 disaster warning sets in the coastal districts and other facilities.

Dr Das said the satellite would provide pictures of cloud to the experts every half hour for analysis. At present the department is getting such pictures twice a day from the polar orbiting satellite.

The Centre at Delhi is for processing the data received via INSAT. The US is building the equipment required for the purpose.

Next year another important weather project is to be undertaken by the department in collaboration with Indian Space Research.

CSO: 5500/7012

PLANS FOR ELECTRONIC TELEPHONE EXCHANGES TOLD

Bombay THE TIMES OF INDIA in English 1 Oct 81 p 5

[Text] New Delhi, September 30--Global tenders have been invited for electronic exchanges of varying capacity in pursuance of the P and T's perspective plan to turn the telephone system electronical.

Much of the requirements in the coming few years will be met by imports.

The communications minister, Mr. C. M. Stephen, informed the parliamentary consultative committee for his ministry today that orders had already been placed for the import of 15,000 lines of electronic trunk automatic exchange to be installed in Bombay, Calcutta, Delhi and Madras.

Similarly, 30,000 lines of local electronic exchange are being imported for installation in Bombay, Calcutta and Delhi.

Besides, tenders have been invited for the supply of 60,000 lines of small electronic exchanges of 200-600 lines capacity and for an additional 60,000 lines of medium size exchanges in the 2000-4000 line capacity range.

Also to be bought abroad are electronic private automatic branch exchanges (PABX) for use during the Asian games.

In addition, to fulfill long-term requirements, the government has decided to set up two electronic switching system factories, with a capacity of 500,000 lines each at locations yet undetermined, with imported technology.

CSO: 5500/7014

BRIEFS

NEW PHONE TARGET--All telephone demands as on 31 March 1982 will now be met by 1985 under a new target announced by Communications Minister C. M. Stephen on Friday, reports PTI. To keep the three-year rule for the wait-listed persons, Government has given up dependence on domestic production and is going in for increased imports of 6.64 lakh of switching equipment, nearly half of them electronic, Mr Stephen told newsmen. He envisaged "telephone on demand" by 1990. He also said the trunk automatic exchanges were being put up in metropolitan areas, transmission lines were being expanded by 50 per cent of their capacity and during the current year itself some two lakh new connections were planned. [Text] [New Delhi PATRIOT in English 26 Sep 81 p 7]

MORE TELEPHONE PLANS--Madras, Sept 29 (PTI)--The new push-button telephone, which reduces dialling fatigue and has greater reliability, is to be in the market by 1983. The Executive Director of the Indian Telephone Industries Mr C. R. Gupta Bangalore complex, told a party of visiting newsmen last week that about 200 pieces of the new model, which has the advantage of speed, were on field trial throughout the country. He also showed newsmen a model of the "671 telephone", which he dropped on the ground to prove it was unbreakable. Mr Gupta said the centre had approved a project for manufacture of 200,000 lines per year of the indigenously developed crossbar switching equipment at Rae Bareli at a cost of Rs 64.5 crore. Full rated production would be achieved within six years. Another project for the manufacture of digital trunk automatic switching exchanges, digital rural switching exchanges and digital private automatic branch exchanges, totalling about 150,000 lines per year at Palghat had also been approved. [Text] [New Delhi PATRIOT in English 30 Sep 81 p 5]

OVERSEAS COMMUNICATIONS CHIEF--Bombay, September 30--Mr. K. C. Katiyar, additional director-general of Overseas Communications Service, will take over from tomorrow as the director general. He succeeds Mr. M. S. Nagarajan, who is retiring. Since joining the O.C.S. in 1958, Mr. Katiyar has been actively associated in the planning of modern international telecommunication techniques and in the progress of research and development in the department. He is an M.Sc. in Physics from Agra University and holds an engineering degree in electronics and telecommunications from the Technical University, Stuttgart. [Text] [Bombay THE TIMES OF INDIA in English 1 Oct 81 p 7]

REMOTE SENSING SATELLITE--Bangalore, Oct 1 (UNI)--An Indian Remote Sensing Satellite (IRS) is being actively planned for operation in the latter half of the 1980s. With Indian needs in mind, the IRS system will attempt to address Indian

resources management requirements with emphasis on agriculture, water management, forestry, certain aspects of mineral geology and petroleum exploration. Discussions were held during the past two years among potential users and more would be held to define the design parameters of the space segment. According to a national paper of India for the Second United Nations Conference on Exploration and Peaceful Uses of Outer Space scheduled for 1982. [Text] [New Delhi PATRIOT in English 2 Oct 81 p 5]

CSO: 5500/7016

PREPARATION FOR LAUNCHING OF PALAPA SATELLITES

Jakarta HARIAN UMUM AB in Indonesian 16 Sep 81 pp 1, 7

[Article: "Satellites B1 and B2 Are To Be Launched in February 1983; Production Costs Total $150 Million"]

[Excerpt] Built at a cost of $150 million, Palapa B1 and B2 satellites, which will replace Palapa A whose working life has expired, will be launched in February and June 1983, respectively, from Cape Canaveral/Kennedy in the United States.

When queried by a member of Parliamentary Commission V in Jakarta yesterday [15 September], Willy Munandir, executive director of PERUMTEL [Telecommunications Corporation] added that the $150 million consisted of a loan from the U.S. Export-Import Bank and is being used to pay for the construction of the satellites, their launch, and insurance.

Munandir did not specify which insurance company was used to cover the possible loss of these satellites.

It has not yet been determined whether the space transportation system (STS) or the space shuttle, still being tested, will be used to launch the communication satellites.

Palapa B has 24 transponders or twice as many as Palapa A. Therefore various preparations are underway to make better use of Palapa B, including adding a system for a digital communication channel as well as a satellite guidance system.

To ensure that far flung areas of the homeland are equally served, a number of communications facilities will be built throughout the archipelago, in particular, those serving remote areas which to date have not had any long distance communication links.

It is expected that new earth stations will be built in 72 cities prior to May 1982. In Aceh they will be built in Takengon, Meulaboh, Sinabang, Tapaktuan, Kutacane Singkil, and Blangpidie. Others will be built in Bagansiapiapi, Tanjung Bahu, Ranai, Bengkalis, Tempilahan, Rengat, and Dobo Singkep (Riau); in Muara Singmep and Piaianan (West Sumatra); in Sungai Penuh, Muara Bungo, and Kuala Tungkal (Jambi); in Sekayu and Tanjung Pandan (South Sumatra); in Bintuhan, Manna, and Argomakmur (Bengkulu) and in Krui, Lampung.

In addition six units will be built in East Nusatenggara, 15 in West Kalimantan, one in South Kalimantan, three in East Kalimantan, two in Southeast Sulawesi, two in Central Sulawesi, two in North Sulawesi, six in Maluku, and five in Irian Jaya.

Construction of small ground stations in remote areas, Munandir said, is also intended as a preparation for a down-to-the-village telephone system program, felt to be greatly needed.

New telephone centrals will be built in each of the 72 regency cities and in other cities.

Also to be established are 1,000 new long distance telephone links at 20 sites, each with 50 connecting units. The 20 sites are Kutacane, Prapat, Pandang, Bagan-siapiapi, Pulau Batam, Dobo Singkep, Palembang, Kuala Tungkal, Jakarta, Bandung, Yogyakarta, Singkawang, Sampit, Balikpapan, Banjarmasin, Uungpandang, Watampone, Palopo, Kolaka, and Denpasar.

In addition to the construction of these telecommunication facilities, workers housing as well as office buildings are being built at a cost of 73 billion rupiah, allocated from domestic resources. However Munadir did not specify the source of these funds. He avoided mentioning that they were national budget funds by saying, "...we are not a company...."

Construction of the Palapa B1 satellite is scheduled for completion by August and for B2 by November 1982.

Palapa B1 will be taken to Cape Canaveral in December 1982 while Palapa B2 will be delivered in March 1983. Palapa B1 will be launched in February and B2 in June of 1983.

Responding to a question from a member of Commission V, Munandir explained that the 24 transponders, each of which can serve 400 telephone voice channels or one TV channel, will be used for domestic and ASEAN [Association of Southeast Asian Nations] purposes.

He clarified that out of the 22 responders, nine are to be used by PERUMTEL, two by TVRI, one by HANKAM [Department of Defense and Security]. For ASEAN nations, 3.5 have been allocated to the Philippines, three to Thailand, 1.5 to Malaysia, and one to ASEAN TV programs. One of the remaining responders is to be set aside for possible ad hoc use while the other two are set aside as reserves in case of a breakdown in a responder.

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CSO: 5500/8501

BRIEFS

MARITIME SATELLITE SYSTEM--Tokyo, 17 Nov (AFP)--A new maritime telecommunications satellite system will be inaugurated in February next year for expanded ship-to-shore telephone and telex services, it was revealed here today. Kokusai Denshin Denwa Co. (KDD), Japan's international telecommunications monopoly, said the new system, INMARSAT (International Maritime Satellite Organization) based in London, will replace the present MARISAT (Maritime Communications Satellite) System. It will use MARISAT and INTELSAT satellites now in service plus a new satellite to be launched by the European Space Agency (ESA) in April next year. At present, a total of 852 ships of 39 nations, including the Soviet Union, are utilizing the maritime telephone service. Of them, Japanese vessels account for about 150. KDD said the number of vessels participating in INMARSAT is expected to reach 5,000 in 1985. [Text] [OW170213 Hong Kong AFP in English 0136 GMT 17 Nov 81]

CSO: 5500/2043

BRIEFS

NEW SATELLITE GROUND STATION--Datuk Musa Hitam and Indonesian Vice President Tun Adam Malik today exchanged ideas on the positive role of ASEAN and its contribution to international politics, such as the Kampuchean and Afghanistan issues. In a telephone conversation the two leaders said the ASEAN spirit was well known in the international political arena as well as its contribution to the economic and political stability of the region. The conversation, which lasted about 10 minutes, was held after the opening of the earth satellite station at (Lundu) at Melaka today. The deputy prime minister opened the 18.5 million reinggit station which now links Malaysia with another nine countries. Earlier in his speech Datuk Musa Hitam said various developments in the field of communications had made Malaysia a gateway in the region. [Text] [BK151040 Kuala Lumpur International Service in English 0800 GMT 15 Nov 81]

CSO: 5500/2043

PUNJAB TOWN TO BE LINKED TO DIRECT INTERNATIONAL DIALING

Karachi DAWN in English 4 Nov 81 p 4

[Text]

FAISALABAD, Nov 3: Direct international dialing facilities would be provided to Faisalabad telephone subscribers by the end of January next, Mr Daud Siddiqui, General Manager, T and T Department, Central Region, Lahore, said.

Talking to newsmen here recently he said that separate machinery for the operation of this system was being erected in Faisalabad.

The international direct dialing system, he said, was succesafully running in Karachi, Islamabad and Lahore, and hoped that in Faisalabad too this system would get popularity.

Mr Daud Siddiqui said that the airport of Faisalabad, Lahore and Multan, located in the central region of T and T Department have been provided telephone booths where facilities of local, trunk and foreign calls were available.

He said that Toba Tek Singh town of Faisalabad District would be provided with teleprinter service before end of the current fiscal year.

In reply to a question Mr Daud Siddiqui said that in order to minimise the telephone faults in Faisalabad urgent steps would be taken. He said that the T and T Department sanctioned 600 new telephone connections at Faisalabad in June last out of which 400 telephones have been installed and remaining 200 would be installed by the end of December next after easing the shortage of drawwire. He said that owing to commissioning of the People's Colony and Sargodha Road exchanges the daily fault complaints of telephones was reduced from 800 to 300.

CSO: 5500/4512

OFFICIAL ON EFFICIENT TELECOM LINKS IN SOUTH ASIA REGION

Lahore THE PAKISTAN TIMES in English 3 Nov 81 p 10

[Text]

ISLAMABAD Nov. 2: Pakistan feels that the time has come to establish efficient and reliable telecommunication links among the regional countries which will not only bring us closer together and facilitate our respective development programmes but would be a singular contribution to the promotion of regional co-operation.

This was stated by the Foreign Secretary Riaz Piracha while addressing the Foreign Secretaries meeting at Kathmandu today according to a message received here.

The study group on telecommunication coordinated by Pakistan has recommended integrated, and accelerated development of existing, and projected bilateral and multilateral arrangements. It has proposed a regular exchange of technical information for the development of internal telecommunication links. It envisages accelerated exchange of information and expertise for the development of appropriate technology, common training facilities and co-operation in the manufacture of equipment.

Referring to the recommendations of five study groups constituted by Colombo meeting, namely, telecommunication, meteorology, agriculture, rural development and health and promotion activities, Mr. Piracha said "recommendations are before us on five very important areas of co-operation. We would now decide on the manner and extent of implementation of those recommendations so that regional co-operation becomes a reality"

The Foreign Secretary expressed the feeling that it would be appropriate to continue meetings at this level from time to time to review the progress of regional co-operation and to take policy decisions on the future course of action. He said "we do not rule out a regional meeting at the ministerial level in due course when the conditions are ripe and with adequate preparation, but this is not the stage to recommend such a meeting".—APP.

CSO: 5500/4512

MICROWAVE TELECOMMUNICATIONS SYSTEM FOR RAILWAY PROGRESSES

Islamabad THE MUSLIM in English 1 Nov 81 p 6

[Text]

LAHORE, Oct. 31: The work on micro wave telecommunication system being installed by Pakistan Railways at a cost of Rs. 723.3 million including a foreign exchange componont of Rs.387.7 million is going on in full swing and the project is expected to be completed by the end of next year. The system is being installed with the aid of World Bank.

The construction of first microwave station has been started at Kamonki where work is in progress.

This station will be a model station for comparison of quality and workmanship. The work on the other sites is expected to start soon.

The detailed route survey has been carried out to find the exact location sites number of towers and quantity of equipment required.

In all, 44 microwave stations will be built on the main line of Pakistan Railways and V.H.F. stations built on seven stations.

The Very High Frequency service shall be provided to the stations on the main line and important branch line from Karachi to Rawalpindi.

Electronic telephone switching system would also be provided for direct dialing facility between the various stations and offices for a running flaw loss of trains.—PPI

CSO: 5500/4513

EXPERIMENTAL APPLICATION OF E-10 SYSTEM OF AUTOMATION OF NODAL TELEPHONE NETWORK IN CZECHOSLOVAKIA

Warsaw PRZEGLAD TELECOMUNIKACYJNY in Polish, No 04, 1981 pp 99-102

[Article by Vladimir Vopalensky]

[Text] Progress in switching technology has caused a gradual shift from conventional systems of crossbar switches controlled by relay (second generation) to the systems with program control (SPC). In the last decade, digital circuitry technology has also spread to the transmission line and has been used together with PCM [pulse-code modulation] systems to introduce systems with digital channel switching. This serves as a basis for the introduction of integrated switching and relay systems, enabling the design of networks on an absolutely new foundation. Such a network is more efficient in the implementation and provides a better quality of service for both the subscribers and the management. Due to the above considerations, it has been decided in Czechoslovakia to study the properties of such integrated systems. The goals were to obtain information on the design, installation and programming of integrated systems, and also on their practical operation, with regard to the qualifications of personnel and the configuration of the network, and finally to the development of assets in order to compare the economic performance of such systems to that of the second generation system.

To accomplish this, two conditions had to be met.

A readily available, commercially produced system should have been used that could be introduced in the future by the Czechoslovak state network in case the tests were positive. This is why the E-10 [cited is electronic telephone exchange] system produced by the TELKOM-TELETRA enterprise in Poznan under the licence of the French concern CIT-Alcatel has been selected.

The exact localization and scope of the experiment had to be determined. This is not to denote the development of a model network, but such a setup of the network that enabled its construction entirely on the basis of an integrated E-10 system.

The goal of the experiment was to study the feasibility of integrated technology under complicated network conditions, the adaptation opportunities of programmed control equipment and the assessment of the influence of this technology on the configuration of the network.

Choice of Location for the Experimental Nodal Network.

While selecting the location, both the operational and the economic viewpoints were given consideration. It was assumed from the very beginning that equipment of such a scope and so costly could not be used solely to test the feasibility and performance of an integrated system. Upon the completion of the experiment, the entire network would have to maintain regular operation. The experience gained would facilitate the regular introduction of E-10 system in larger areas.

In order to study the technical performance of the integrated system and the influence of its peculiar technology on the organizational structure of operation and maintenance, it was necessary to select a localization which would perceptibly emphasize all the characteristics of the system. These considerations led to the following basic prerequisites for the selection of localization for the experimental network.

1) The network must be hooked on to all systems used in the Czechoslovak network, especially the ones which are to be used in the future.

2) The network must cover an area integrated both from the network and the administrative point of view.

3) The network must test the performance of the system at the level of a local network as well as a long-distance network, and also test it from the point of view of setting up of common subscriber groups (CENTREX).

This led to a decision to stage the experiment in a nodal network and not in a city, as it had been done, for example, in Poland. The nodal network in Czechoslovakia connects the long-distance and local networks. They are organizationally autonomous areas with unified control of telecommunications traffic. They coincide with the administrative division of the country. The networks cover an area with a radius of 20 to 25 kilometers and comprise several local telephone areas. Calls completed within their limits are counted as single units regardless of duration, whereas calls completed between different local networks are subject to multiplex counting.

Numbering within the nodal network includes the numbers of local networks or of special services. From the point of view of the long-distance network, the nodal network is a single unit and has one common area code.

Also to be taken into consideration were the conditions ensuing from the traffic requirements and from the necessity to obtain a maximum of information enabling the conclusions for further prognostic studies, primarily in the field of applying the integrated system in local networks and at higher network levels, in long-distance exchanges.

Consequently, the following requirements were established:

1) an average nodal network should be selected, specifically, as to the area, configuration and the attained telephone traffic density,

2) there should be a direct link with the existing long-distance exchange in Prague (system AKE 13) and another exchange of the ARM 20 system.

3) a location with existing cable network in good enough condition, mechanically and electrically sound, should be found in order to facilitate the conversion of the cables to PCM operation.

4) in order to reduce costs, a nodal network with obsolete equipment slated for replacement should be selected.

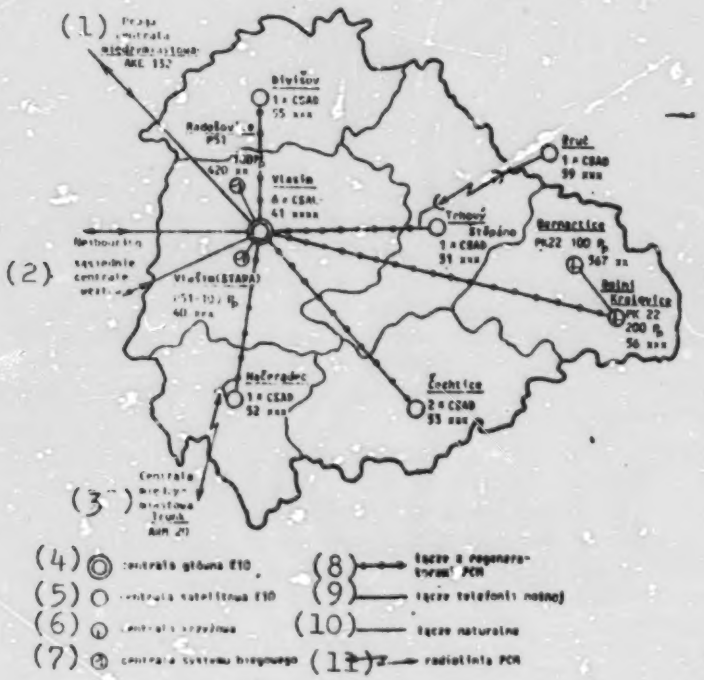


Figure 1. Plan of the Experimental E-10 Network in the Area of the Vlasim node.

1. Prague long-distance exchange.
2. adjacent nodal exchanges.
3. long-distance exchange.
4. main E-10 exchange.
5. satellite E-10 exchange.
6. crossbar exchange.
7. running system exchange.
8. links with PCM processing amplifiers.
9. links with carrier telephony.
10. natural links.
11. PCM radio links.

Having considered all the requirements, the Vlasim node comprising six local phone networks has been selected. At a higher level of the network the node is connected to the long-distance exchange in Prague.

The setting-up and application of the E-10 system was started by the installation in the center of the network of the main E-10 exhcange with digital switching field and the installation in local centers of peripheral networks of particular satellite exchanges in the form of remote subscriber end offices CSAD (expansion unknown).

Connections between them are provided by the channels of PCM links. The general plan of the network is shown on figure 1, whereas the block diagram on figure 2. To ascertain the possibility of interchange with crossbar exchanges produced in Czechoslovakia, one local netowrk with the PK22 system was built, whereas the interchange with the conventional running P51 system was tested by two exchanges of this kind, each serving 100 subscribers. Total capacity of the network is 6,500 numbers, out of which 3,000 in the center, 3,000 in satellite exchanges combined and the remaining 500 using first and second generation equipment as before.

Integration of the nodal Vlasim network with the long-distance network is shown in figure 3. The network is connected with the long-distance and international exchange of higher CT2 in Prague of the AKE 13 type and another long-distance exchange of the ARM 20 type; code MFCR 2 was used for signalization.

Besides, there are connections with adjacent nodal networks employing the P51 running system. These links make use of carrier telephone systems and long-distance 50 Hz switching devices. All these links use pulse signalization and decimal switching.

The PCM system is used in connections within the experimental nodal network, that is the connections between the switching center and the satellite exchanges. This system employs modified DM type cables with star-quads. Consequently, frequency 1024 kHz could not be used to measure short distance crosstalk while swtiching star quads, as usually is the case in local networks. This was so because the attenuation of crosstalk strongly depends on frequency. Due to this, a method of wideband measurement of short-distance cross-talk attenuation studying the energy of the cross talk spectrum was elaborated.

Theoretical values were determined which could later be attained in practice. This method brings fast results in the field while the pairs selected in this manner are entirely satisfactory for PCM traffic.

One of the satellite exchanges was linked to the central exchange by the 11AP 32 device modified to carry digital signals in order to study the possibilities of the system with the introduction of a radio link produced in Czechoslovakia. Also, connections with another long-distance exchange were partially carried through that line. This necessitated a conversion of PCM code HDB3 to AMI code. Such a measure will facilitate the studies aimed at the verification of all standard signalling devices and basic functions required in long-distance networks, including new overflow traffic control and rate schedules.

Experience Gained During the Installation and Operation.

A contract for the delivery of the E10 system equipment was signed in June 1977. In November 1978 the necessary space was provided to the contractor and the installation of equipment began. Before yearend 1978, basic work was completed, the power plant was installed in April 1979 and panels were placed in the switchracks. In June 1979, cable runs were modified and the start-up of equipment in the entire network began. Functional testing started in November 1979, whereas preliminary operation commenced on December 12, 1979. Preliminary operation was divided into three stages.

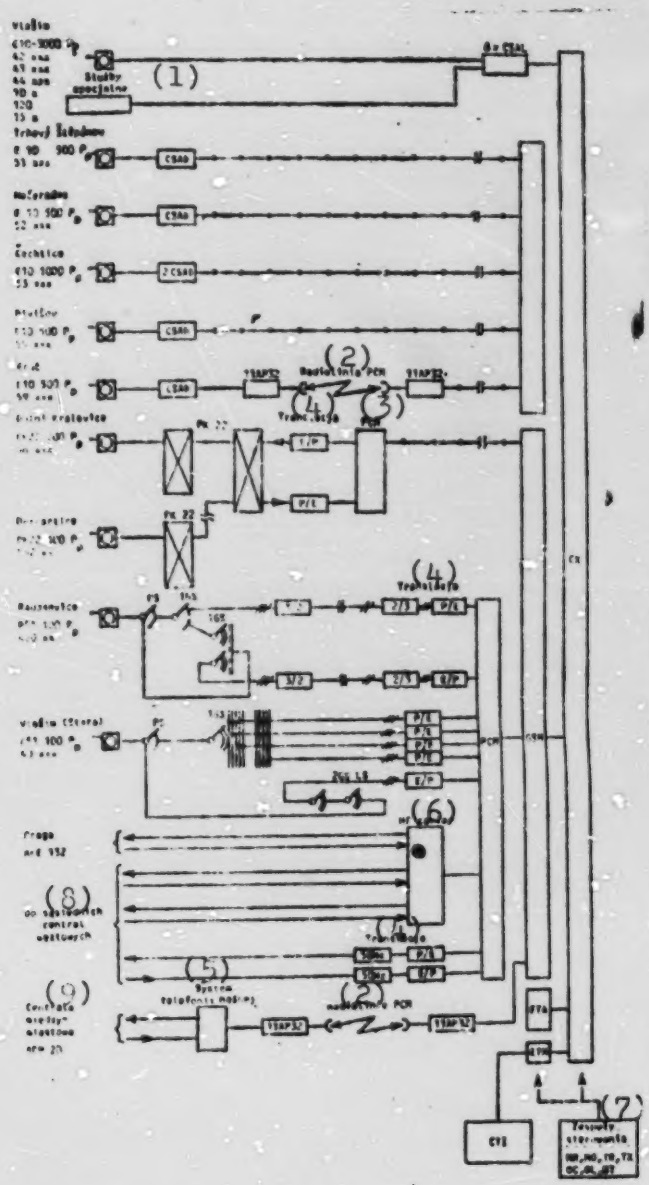


Figure 2. Block Diagran of the Experimental E-10 Network

1. Special services
2. PCM [pulse-code modulation] radio link
3. pulse-code modulation
4. Repeater
5. Carrier telephone system
6. High frequency carrier
7. Control devices
8. Towards adjacent nodal exchanges
9. long-distance exchange

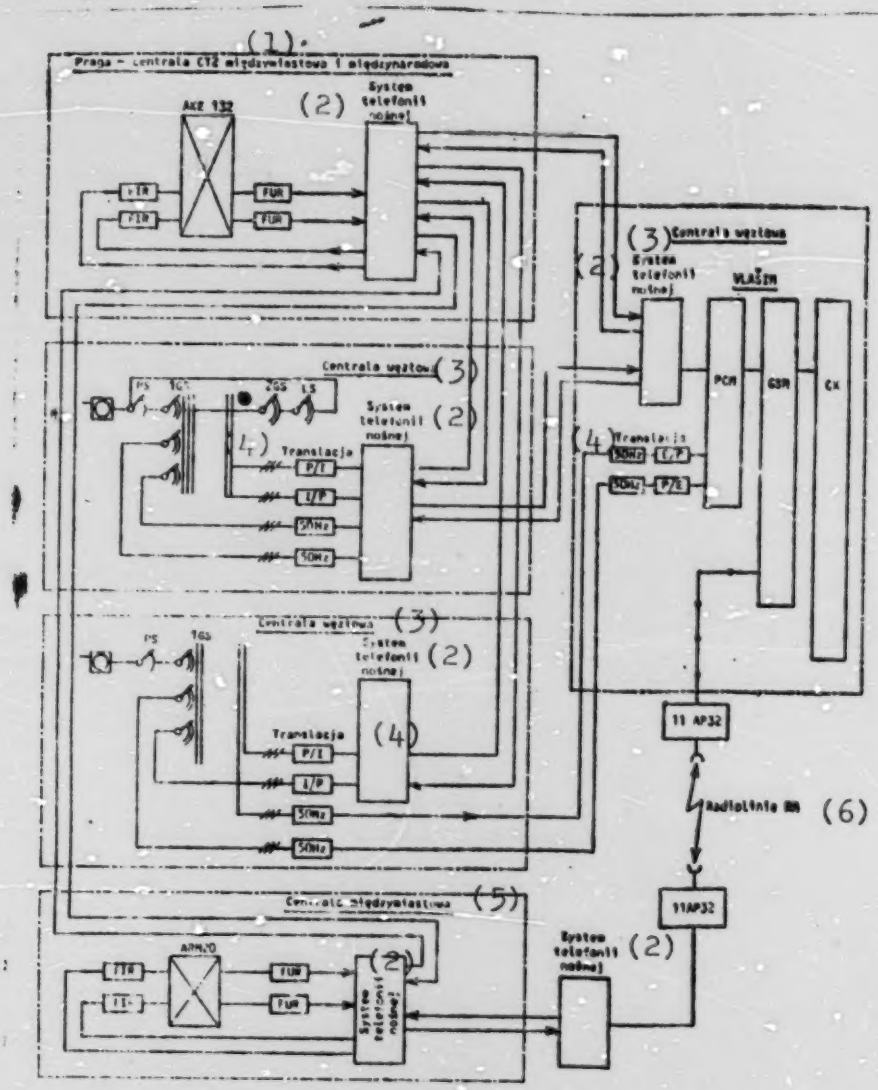


Figure 3. Diagram of Connections in the Experimental E-10 Network.

1. Prague - CT2 long-distance and international exchange.
2. System of carrier telephony
3. Nodal exchange
4. Repeater
5. Long-distance exchange
6. Radio link RM.

The first stage continued for two weeks in December 1979 and was carried out without subscribers. Statistical and functional testing was performed.

Subsequently, between December 27 and 30, 1979, subscribers were connected to the E10 system and preliminary operation with subscribers began. Preliminary operation ceased with the commissioning of the equipment by the Czechoslovak Communications Authority on 31 March 1980.

The third stage lasted from 1 April 1980 until the end of October 1980 with no assistance from the contractor. The maintenance of the system was left entirely to the previously trained local personnel.

During statistical tests carried out in the first stage, a rate of wrong connections of 0.18 percent was attained. For 10,000 calls put through by the SIMAT research device 18 wrong connections were made.

The second stage can be defined as the gradual hook-up of the equipment to the network, start-up of automatic research devices and remedying signalization mistakes. At the end of this stage, the entire system was commissioned for operation.

The third stage lasted six months, during which time the rate of failures and the reliability of equipment were studied. The effect of stabilizing the performance of equipment is presented in the [following] table.

Number of Failures and Service Calls During the Third Stage of Preliminary Operation.

Month	6	7	8	9
Number of maintenance service calls	27	15	12	11
Number of replaced panels	11	11	7	6
Number of failures of CSAD assemblies	5	3	3	1
Number of failures of CSAL assemblies	1	3	1	1
Average time between failures (hours)	25.5	48	62	67.5
Number of replaced processing amplifiers	1	12	2	0

Between 1 June and 31 September 1980, a total of 65 failures occurred in the E10 exchanges. The greatest share of failures was in subscriber panels 18CSA, in the points directly connected with the outside cable network or containing tube relays. Among these points, there are subscriber equipment, links and answering jack field in the concentrator block. A markedly increased incidence of processing amplifiers' failures occurred in summer months, as a rule caused by atmospheric discharges.

Personnel in charge of operation and maintenance were trained in the contractor factories. They were mostly selected from the personnel that previously serviced switching equipment based on the running system. The training lasted for about six months in the Teletra-Poznan factory for those in charge of the E10 system and four months in the Videton-Budapest factory for the personnel of the center of technical servicing (CTI). After 10 months of operation it can be ascertained that the personnel have proved their qualifications. It has turned out that a certain number of personnel service three to four times more equipment than with previous technologies. The assumption of reducing the necessary floor space has also been borne out. In the main exchange in Vlasim floor space requirements are about 25 percent

of those for a comparable second generation exchange, whereas satellite exchanges for 1,000 subscribers could be installed in rooms with floor space of about 25 square meters, including power plant, main distribution frame and other auxilliary equipment.

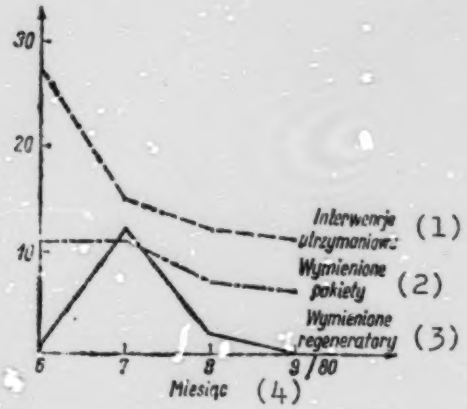


Figure 4. Operating Performance of Experimental E10 Network.

1. Maintenance and service calls.
2. Replaced panels.
3. Replaced processing amplifiers.
4. Month.

Power load of the main exchange in Vlasim is approximately equal to that of a comparable second generation exchange. Unlike the second generation equipment, the load is evenly distributed over the entire day. In satellite exchanges, power load is considerably lower than before and is 8A at 48V for 500 subscribers.

Since the two-circuit operation extended to the limits of local networks, a higher total attenuation was allowed, which enabled the use of cables with a smaller cross-section and, consequently, savings of copper. Attenuation between subscriber entrances is permanent for the entire network and stands at 4.5 dB.

Direct interchange between PCM channels and channel modulators of the analog system was tested in the interchange with analog relay systems, especially in the long-distance network. In these tests, the signalling channel was keyed. Due to this, the previously used relays became unnecessary, because their functions had been taken over by the multiregister MR of the E10 system which controled keying. The transmission chain, of course, must be adjusted for level equalization.

Experience gained in the operation of the CTI technical service center has shown that the concept of the E10 system employing a commercial computer for supervision and communication between the exchange and operation personnel was favorable for the work of the exchange. All testing functions have been studied and are employed, such as, for example, remote measurement of subscriber lines, automatic testing of long-distance links etc.

A weak point has, however, been found in low mechanical endurance of some computer hardware, especially teleprinters.

Another drawback which has been found is caused by the dependence of satellite exchanges' (CSAD assemblies) reliability on the performance of the PCM transmission link. Failure of both paths makes it impossible to complete even an internal call. We think that in the future this drawback will be eliminated through the use of internal repair work.

* * *

The results of preliminary operation of the experimental network in Vlasim can be summarized as follows:

--the entire network was put into operation within 30 months of the signing of the contract;

--the assumption that the necessary floor space will constitute 25 percent of the requirements of previously employed systems has been borne out;

--maintenance requirements have fallen to one-third of the level reckoned with for older systems;

--it has been proven that interchange with multiple telephone (carrier) systems was possible without relays, by keying the signalling channel alone;

--permanent low attenuation (4.5 dB occurs between all entrances into the system;

--in switching within the limits of an integrated exchange, a low rate of wrong connections occurs (below 0.2 percent);

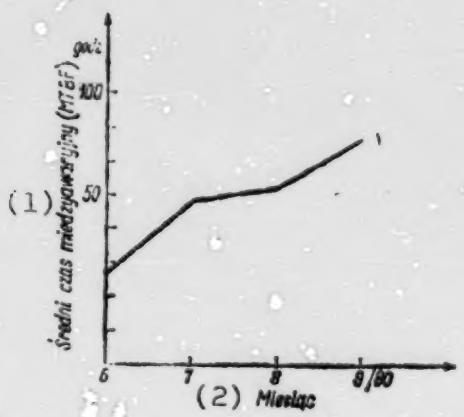


Figure 5. Characteristics of the Average Time Between Failures of the Experimental E-10 Network.

1. Average time between failures 2. Months

--the rate of failures perceptibly decreases all the time, which attests to the stabilization of conditions; however, it has not yet attained the predicted minimum value;

--transmission channels have not yet acquired the required resistance to voltage overload;

--a need has become evident to solve the problem of internal traffic in remote satellite exchanges, when operating the equipment in rural areas.

Nonetheless, it can be generally ascertained that the E10 system meets the requirements made and is feasible for application in the future in the Czechoslovak state network.

9761
CSO: 8341/0146

BRIEFS

NEW PROPAGANDA TRANSMITTER SCHEDULED--A new transmitter for broadcast to foreign countries called Zapadni Cechy (West Bohemia) will be built in the Bor area of Tachov district. [Prague SVOBODNE SLOVO in Czech 30 Oct 81 p 4]

CSO: 2400/55

BRIEFS

INTERNATIONAL COMMUNICATIONS SEMINAR--An international seminar on communications in the North-South dialogue is being held from 10-13 November at the International Center of Higher Journalism Studies for Latin America [CIESPAL]. The seminar is sponsored by the Latin American Social Research Institute, the CIESPAL and the German Friedrich Ebert Foundation. The seminar is analyzing the results of the Cancun summit and the new international information system. [PA121720 Quito Voz de Los Andes in Spanish 1230 GMT 12 Nov 81 PA]

CSO: 5500/2042

BRIEFS

MICROWAVE COMMUNICATIONS SYSTEM--Cairo, 8 Nov (MENA)--It has been decided to set up a nationwide microwave network to provide instant communications between all the centers of the Egyptian armed forces all over Egypt. This network guarantees the secrecy of communications among the armed forces in addition to removing problems arising from faulty cables. In tomorrow's issue, the MAY newspaper says that Egyptian army experts are currently studying the balloon system used by the United States to supervise its borders. The balloons gather information and send it to monitoring centers--similar to earth monitoring stations. The cost of establishing the balloon system is estimated at $80 million, while the radar equipped E-2C planes, which we will receive from the United States, cost about $165 million per plane. The four planes for which we have signed a contract are not sufficient to cover our borders. However, if we establish the balloon system in addition to buying these planes, we will have a comprehensive monitoring system which will cover our entire border. [Text] [NC082027 Cairo MENA in Arabic 1952 GMT 8 Nov 81]

CSO: 5500/5001

WESTERN NEWS AGENCIES TO BE 'EVALUATED'

NC161554 Paris AFP in English 1541 GMT 16 Nov 81

[Text] Tehran, 16 Nov (AFP)--The Iranian revolution is currently in a phase of transition between the old order and the new, and authorities are busy sorting out friends from enemies, according to the minister of Islamic guidance, Hojjat Ol-eslam 'Abdolmajid Ma'adikhah.

In an interview, Hojjat Ol-eslam Ma'adikhah, who is responsible for the press, said today that the state of transition was a sort of "purgatory" in which a review of friends and enemies was taking place.

"The future of news agencies will naturally be spelled out when a new order is established," he said. Agencies would be identified, he said, as "those which reflect reality and those which are tools in the hands of our enemies."

"News agencies, notably Western agenices, have acted in such a way that the people and revolutionary organs do not believe they are really news agencies," he said. Instead, they believe the agencies are a disturbing factor in the world, he added.

The Hojjat Ol-eslam accused news agencies of "overrating certain problems," while "under-estimating or neglecting others."

He asked, for example, whether news agencies reported the acts for which executions were ordered "as much as they have blown up the question of executions," or whether they "speak of those who repent."

Iranian revolutionary leader Ayatollah Ruhollah Khomeyni, who yesterday met with the minister, urged those responsible for information to "do their duty" in the face of attacks by foreign radios and newspapers.

CSO: 5500/2043

BRIEFS

SOLAR TELEVISION BEGINS TRANSMISSION--Muscat, 15 Nov (WAKH)--It was announced here today that the Sultanate of Oman has established its first solar television transmission station to facilitate television transmission to various areas of the sultanate. The new television transmission will cover (?'Abri), in northwest Oman and 300 km from Muscat. [Text] [GF151720 Manama WAKH (GULF NEWS AGENCY) in Arabic 1309 GMT 15 Nov 81]

CSO: 5500/2043

BRIEFS

SATELLITE GROUND STATIONS--By the end of the first quarter of 1982 Qatar will have begun construction of a new satellite ground station which will be linked to a satellite presently above the Atlantic ocean. The new station is just one part of Qatar's plans to expand direct telephone links with the rest of the world. Construction of a third station is planned for 1988. This third station is intended to be linked with the Arab satellite [ARABSAT] and a satellite above the Indian ocean to provide Qatar with telephone connections with the Far East. The second station will provide direct telephone links between Qatar and the United States, Canada and some Latin American countries. Another part of the plan which will also be implemented in the second half of the 1980's is a project to construct a station on the coast to link Qatar with all ships in the area so that aid can be provided as well as weather and navigational data and other services. [Text] [Paris AL-MUSTAQBAL in Arabic No 244, 24 Oct 81 p 67]

CSO: 5500/4705

TELEPHONE NETWORK CONTINUES POOR DESPITE NKUNTUNSE STATION

London WEST AFRICA in English No 3352, 26 Oct 81 p 2542

[Text]

The domestic telephone network in Ghana will continue to be "disrupted" in spite of the new earth station at Nkuntunse, according to Mr. Kwaku Acquah, the Ashanti Regional Director of the Posts and Telecommunications Corporation (P&T). He was replying to a complaint from Mr. S. K. Boafo (MP for Ashanti-Akim) about disruptions in telephone and television services in the Ashanti Region.

Mr. Acquah said that despite the earth satellite station, the telephone and telegraph services to most parts of Ghana would continue to be adversely affected by obsolete machinery which at best could only serve as standby equipment. He said the Electricity Corporation specifically lacked adequate transformers to link the Akosombo electricity grid to connecting stations in other parts of Ghana.

A correspondent writes: What Mr. Acquah could have said to make things perfectly clear was something like this: Ghana has acquired a very fine earth station which uses the INTELSAT satellite. All this fine equipment is being used to greatly improve Ghana's communications with the rest of the world, that is external contacts across thousands of miles of land and sea. At present, the system is still operator-controlled where the telephone is concerned. When the switching station is installed at Accra-North, there will be automatic dialling so that Kofi and Efua can call John and Mary (etc,) almost instantaneously. However, the same INTELSAT system could have been used for Ghana's domestic telephone and telegraphic systems, that is if a good number of relay stations were added to the network and if all the obsolete machinery in the exchanges were replaced with modern equipment. Since this was not the case, it is relatively easy now to make an international call from Accra to wherever you please, but not so easy if you want to make the call from Kumasi or even Cape Coast. All the new equipment is to connect Accra with the world; connecting the rest of Ghana to Accra is to follow.

CSO: 5500/5622

TELEPHONE SYSTEM PHASES IN ELECTRONIC EXCHANGES

Johannesburg THE STAR in English 23 Oct 81 p 9

[Text]

The days of gritting your teeth while you wait to get through to a telephone number you have dialled are almost over.

The first fully electronic exchange in South Africa was officially opened by the Prime Minister, Mr P W Botha, in Pretoria today and heralds a new era.

Because electronic exchanges have no moving parts, a call will connect the moment that the last digit is dialled.

The Pretoria exchange is the first of a series to be supplied to the Post Office under a 15-year contract.

The equipment is imported and the extensions planned for installation until 1983 are already being manufactured in Boksburg.

About R30-million will be invested in the venture, which will not only provide South Africa with one of the most modern telephone exchange systems in the world, but will completely revitalise the country's electronic components industry.

The main exchange has been installed in the central exchange building in Pretoria and will have an eventual capacity of up to 30 000 subscribers who may be connected either at the main exchange or at a number of satellite exchanges.

Two of these have been housed in existing Post Office buildings in Rosslyn and Lynnwood Glen, while others are installed in transportable containers that will be sited at Mamelodi East, Mamelodi West, Saulsville, Eersterust and Attridgeville.

The second electronic exchange is now being installed and tested at Sunninghill Park on the Witwatersrand. The first of its kind in the world, it will be opend on November 4. Another 20 electronic exchanges will come into operation in the next two years.

It is estimated South Africa's telephone system will be fully electronic by the end of the century.

CSO: 5500/5620

DIGITAL PHONE SYSTEM OPENS 'NEW AVENUES'

Johannesburg RAND DAILY MAIL in English 5 Nov 81 p 5

[Article by Bev Mortimer]

[Text]

THE introduction of digital electronic exchanges by the Post Office will lead to the establishment of an electronic industry of great strategic value, the Minister of Post and Telegraphs, Mr Hennie Smit, said yesterday.

Mr Smit was officially opening the second fully electronic exchange in South Africa yesterday.

The exchange — also known as a digital exchange — has been installed in Sunninghill Park, Sandton, by Siemens Limited, of Germany, and is similar to the one in Pretoria.

Except for these two exchanges, all others in the country were of the electro-mechanical type. But it was planned to instal another 20 electronic exchanges in the most important metropolitan areas of the country next year, Mr Smit said.

Although the present electro-mechanical exchanges rendered good service, it had been obvious for some time that a major change would have to be introduced.

"Because of the mechanical nature of these exchanges their maintenance was labour intensive and high reliability could only be achieved by continuous lubrication, adjustment and overhaul . . ." Mr Smit said.

He outlined the advantages of the new fully electronic exchange over the old exchange:

- They had no mechanical moving parts that needed lubrication;

Reduced

- The time and labour required for installation work was greatly reduced;
- The floor space required was 40% less;
- They were about 20% less expensive;
- Local calls could be set up instantly;
- Ultimately malicious calls could be traced;
- They will allow the addition of sophisticated facilities such as alarm clock service;
- They will allow the Post Office to automate the operation and administration of the telephone service;
- Ultimately a better speech quality will be obtained;
- They will lead to the establishment of an electronic industry of strategic value.

CSO: 5500/5623

BRIEFS

FIRST GERMAN EWSD EXCHANGE--The first German EWSD fully-electronic exchange in the world will be commissioned in South Africa on Wednesday. The exchange at Sunninghill Park, Johannesburg, will be put to use even before similar exchanges in Germany. If all goes according to schedule, another 20 fully electronic exchanges will come into operation during 1982/83 and estimates are that South Africa's telephone system will be fully electronic by the end of the century. [Text] [Johannesburg THE STAR in English 2 Nov 81 p 7]

CSO: 5500/5623

FINLAND TO JOIN SWEDEN IN TELE-X STUDY

Helsinki HELSINGIN SANOMAT in Finnish 21 Oct 81 p 8

[Text] Finland will join Sweden in the Tele-X satellite study. The decision was made by the government ministerial committee on economic policy on Tuesday [20 October]. Norway had made the same decision already earlier, and Denmark is expected to join soon.

The decision by the government involves only Finnish particiaption in the study of the enterprise. Only after the study has been concluded will a decision be made on whether to join or not.

Participation in the study will not produce direct expenses for Finland, but it does assume that certain other studies will be undertaken. These will cost approximately Fmk 2.5-3 million, and they will be paid by the Ministry or Trade and Industry from their target research funds.

Tele-X to Transmit Computer Information

According to the ministerial committee on economic policy, Finland's primary goal is to find out how Finnish industry could participate in the satellite venture and what the forms of participation would be.

The Swedes intend to use the Tele-X satellite to improve the standards of space industry. The satellite is for experimental operations and is to be used primarily for transfer of data.

The satellite, in other words, will primarily serve in telecommunications, that is, in telegraphic, telephone and computer connections. In addition to this, two to three television channels could be connected with the satellite.

Although the Tele-X satellite is primarily meant for industrial users, the TV channels could also be made available for Nordsat in the event this cooperation will be assumed. Discussions on Nordsat will be continued in November in the Nordic Ministerial Committee.

The Swedes have not planned the new satellite as a substitute for Nordsat, but they have implied that the Tele-X satellite will be necessary in case a positive decision is made on Nordsat.

Preliminary price estimates by the Swedes are set between Fmk 640 and 720 million. According to the present plans, the satellite would be launched as late as 1986.

Sweden and Finland plan to continue discussions on the satellite during the present month. They were originally started last spring.

The Swedes say the satellite negotiations should be revved up, since they intend to present the matter to the Parliament for a decision in May 1982.

Finland Likely to Pay 10 Percent

The negotiations between Finland and Sweden have also dealt with the matter of the division of the expenses in case the satellite cooperation is undertaken.

It was agreed from the beginning that the expenses will not be divided according to the basis normally used in Nordic cooperation.

Finns also regarded the original proposal by the Swedes of 20 percent to be too high, because it would have meant, on the present price level, a bill of Fmk 130-145 million.

Sweden later accepted the Finnish proposal of 10 percent, which means that the Finnish 5-year bill will be Fmk 65-72.5 million.

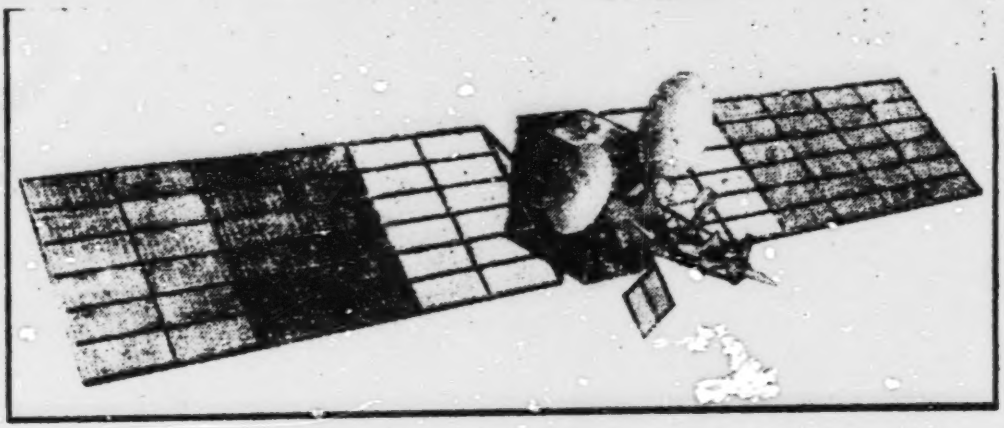
9571
CSO: 5500/2024

NORWAY, FINLAND SEEN READY TO AID SWEDEN IN TELE-X PLAN

Stockholm DAGENS NYHETER in Swedish 28 Oct 81 p 8

[Report by Olle Rossander: "Another 30 Million Kronor for Nordic Tele-X"]

[Text] A massive investment in a Nordic telecommunications satellite--Tele-X--and new rules so that the public sector will be better able to favor Swedish industry when orders are placed.



After the harsh criticism in recent months of big Swedish orders' being placed abroad, Nils G. Åsling, minister of industry, is ready to take measures.

Most recently LM Ericsson lost a big defense order and ASEA [Swedish General Electric Company] lost a big Vattenfall [Swedish state power authority] order. In both cases American concerns were able to offer lower prices than the Swedish firms.

Protection of Free Trade

The contract regulations provide that the state, municipalities, and county administrations must buy goods where they are cheapest, if the quality, etc., are the same.

The contract regulations are for the purpose of protecting the taxpayers and free trade.

"How the proposal will look I cannot say, but it will be possible, for example, to arrange public contracts better so as to favor Swedish industry," said Nils Åsling.

"It is important to support industry especially when it is a matter of giving Swedish industry a chance to develop new technology," Minister Åsling said.

30 Million Kronor

At the press conference the minister of industry also announced that Norway and Finland, but not Denmark, are prepared to put up jointly perhaps 15 to 20 percent of the development costs for the telecommunications satellite Tele-X.

The government has also decided to give another 30 million kronor for continued development and planning for Sweden's taking its place among the satellite countries.

Tele-X, which cannot be launched before 1986 at the earliest, is estimated to cost a total of 800 million kronor, and can be used by the Nordic telecommunications and TV companies both for data transmission and for TV broadcasting over the Nordic area.

The satellite will also be used for research.

Minister Åsling emphasized at the press conference that the government certainly supports research and development in fields where Swedish industry can bring home big export orders in the future.

"It has been questioned whether we are investing right and it has been said that we only invest in money-losing traditional industry. That is wrong," said Nils Åsling after the decision to allot 30 million kronor to the state Space Corporation for continued work with the Tele-X. "We are systematically working to build up both a home market and export opportunities for our electronics industry."

8815
CSO: 5500/2030

BRIEFS

NORDIC MOBILE PHONE SYSTEM--The Nordic automatic mobile telephone system is almost ready for use. The Lahti mobile telephone exchange will be tested during November, and in December the NMT system will be opened for test use. The system is going to be made available for general use in late February or early March, concurrently in all the Nordic countries. The customers can then connect from their cars with any telephone number in the Nordic area. In Finland, the system will cover about 10 support stations by the beginning of March. The network will first extend to as far north as Tampere, but already by 1986, all the way up to Rovaniemi. The grade of service of the manually operated system will not suffer from the automatic system since this system is completely new. It is expected that mobile telephone traffic in Helsinki and Uusimaa will improve. From the beginning of next year, the fee for connecting to the manual and automatic mobile telephone system will be Fmk 90. In addition, the users of the manual system will pay a monthly fee of Fmk 30 and those of the automatic system a fee of Fmk 120. [Text] [Helsinki HELSINGIN SANOMAT in Finnish 21 Oct 1981 p 6] 9571

CSO; 5500/2024

GSCHEIDLE ON LARGE-SCALE USE OF BROAD-BAND COMMUNICATION

Duesseldorf WIRTSCHAFTSWOCHE in German 9 Oct 81 pp 114, 116

/Interview with Federal Post and Telecommunication Minister Kurt Gscheidle/

/Text/ The Federal German Post Office intends to press ahead with telecommunications by way of a DM74 billion program to be carried out in the coming years. Business will be the principal beneficiary. "In 30-40 years" at the earliest, thinks Federal Post and Telecommunications Minister Kurt Gscheidle (SPD) will private homes also be fully linked by cable. The WIRTSHCAFTSWOCHE talked with the minister.

WIRTSCHAFTSWOCHE: Minister, last May you fired the starting pistol for Bigfon. This pilot project will enable more than 300 parties to conduct conference calls by means of glass fiber, to receive radio and TV transmissions and transmit data and drawings. Some 70 of these parties will also be able to conduct television-telephone conversations. Have you any definite ideas when and in what stages this broad-band communication will be available for mass application?

Gscheidle: The basic decision on the general use of glass fibers is to be made in the coming months, so that industry may be able to gear up in good time for later mass production. The basic decision will also spell out the technical and economic development targets. Once these have been achieved, the post office will be able to begin with the standard construction of a glass fiber telecommunication network from 1986 on and the introduction of the television-telephone in 1990.

WIRTSCHAFTSWOCHE: To what extent will that be realized?

Gscheidle: If I were to give you any definite propositions now, they would amount to no more than the predictions of a soothsayer looking in a crystal ball. As regards Bigfon, we are now able to exactly describe only the test stage. The subsequent standard use of glass fiber technology will be determined on the one hand by its technical maturity and its cost compared with traditional techniques, on the other mainly by the demand for broad-band communication services. At the present time, for example, we do not know how much interest there will be a few years hence in the television-telephone and video conferences, although we have some indications that interest will be considerable.

WIRTSCHAFTSWOCHE: Is it no more than wishful thinking for industry to believe that the commercial use of broad-band networks will be possible--at least in industrial conurbations--from 1985 on? Would you subscribe to that belief?

Gscheidle: 1985 is a very early date for the realization of such far reaching wishes. Still, I assume that we will be able to make available the necessary services in case of actual need, for example ultra rapid data transmission.

WIRTSCHAFTSWOCHE: Is it really possible to forecast the total of investments needed for the sector of telecommunications?

Gscheidle: We are always able only to start with the current plans--long-range plans are beset by many uncertainties. According to our present status of knowledge we will spend DM33.8 billion for the telephone sector alone--local and long-distance calls--including the cost of cables; DM74 billion have been earmarked for the next 10 years.

WIRTSCHAFTSWOCHE: Why is it such a problem for your agency to talk in definite terms about the future of broad-band communications? The technologies to be used by the future networks are already known.

Gscheidle: You are right insofar as the technology of the respective end devices is known. However, every breakdown now occurring in communication and data systems is caused by our failure even at this time to control the software in the various networks, including the respective technology. The proposed integration of all networks in a glass fiber network for Bigfon raises additional problems, and we are not yet able to say that these will definitely be settled in a few years time. Moreover it will be necessary to develop a new generation of technologies and, by international standardization, provide the prerequisites for pushing ahead with total worldwide integration.

WIRTSCHAFTSWOCHE: In other words the euphoria in matters telecommunication and office of the future is quite premature?

Gscheidle: I do not mean to say that. I merely want to suggest that great efforts will be necessary to actually keep to the timetable. You must not forget that not only experiments like Bigfon are very important. A great deal of importance must also be assigned the communication networks being constructed in some developing countries. By comparison with the industrial nations these countries have the advantage of not being compelled piece by piece to replace the existing networks. Advised by the industrial countries they are able directly to employ the new technologies.

WIRTSCHAFTSWOCHE: To return to standardization and general integration. In how far is that a matter for industry, and where does the post office take up the challenge?

Gscheidle: The task of determining communication standards is in the scope of the post office. Aiming to obtain internationally acceptable and usable standards, the Federal German Post Office accomplishes this task in cooperation with the post offices of other countries. Of course that does not happen without the involvement of industry.

WIRTSCHAFTSWOCHE: And yet you obviously do not expect the realization of the oft heard catchword "total cable systems."

Gscheidle: We must draw a dividing line. If this catchword implies such items as are represented in illustrated journals as "command posts in every home," I do not believe in it. If for no other reason than the enormous costs involved it will take 30-40 years before every home has its own glass fiber connection. And even then we will have to ask whether the--theoretically feasible--total communications will in fact be either wanted or accepted by the public.

WIRTSCHAFTSWOCHE: What, then, do you believe?

Gscheidle: The following is my own personal opinion: The private consumer will surely be quite satisfied initially to receive his television programs with the highest possible picture quality, and to possibly obtain additional services. In private homes the television-telephone will certainly assume importance later than in business. Business will probably be the first to largely profit from broad-band individual communicatons--provided the problems and difficulties described have been ironed out.

11698
CSO: 5500/2023

MINISTER FORESEES FURTHER EXPANSION OF SHORT-RANGE RADIO

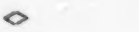
Stockholm SVENSKA DAGBLADET in Swedish 11 Oct 81 p 6

[Report by Björn F. Hansen]

[Text] "I stand firm in my intention to present a bill on short-range radio in the spring," says Jan-Erik Wikstrom, the minister of education. He is also counting on it that several places in the country will have short-range radio the last half of 1982.

Many of the authorities concerned insist that the decision on short-range radio should wait until the current experiments in local radio administration have been carried out. "No great importance can be attributed to that point of view unless short-range radio and local radio broadcasts are mutually exclusive. In my opinion they are not," says Jan-Erik Wikström.

Does short-range radio need ethical rules? Opinions on that point differed widely when the short-range radio organizations in the country started a national meeting Friday in Stockholm.



The short-range radio committee with Karl-Eric Norrby, M.P. (C [Center Party]) as chairman thinks rules are needed. There have been many complaints about transmissions with "reiterated racist phrases," etc., but no proceedings have been instituted on any of them by the attorney general. Since the law now allows such broad freedom of expression, the committee insists that rules are needed.

"No rules are needed! We already have our own morals and our own rules," Mirjam Knudtzon, of Smyrna Parish, Göteborg, objected. On the other hand, she would like a tightening up of the law to provide better protection for the integrity of the individual.

Attorney General Bengt O. Hamdahl had been invited to the conference.

"A requirement of impartiality and objectivity cannot be set for the short-range radio," he said.

"But it appears obvious to me that the short-range radio, like the press, should engage in self-policing," he continued. A system of rules is needed, but we must

be careful not to stray into the field of infringing the freedom of the press."

"The rules that the short-range radio has must be supplemented. For one thing, the prohibition against advertising is inadequate," said Lars Bergman, director of the radio board. "Since the experimental program started, the short-range radio committee has been compelled to intervene a dozen times or so against advertising plugs in the transmissions."

The short-range radio associations are to take a position during the conference on a proposal to create a national organization. According to Olle Palmborg, secretary of the committee, the organization would have three main objectives: to be the central organization for the local associations, to adopt ethical rules and maintain respect for them, and to be the negotiating party with STIM [expansion unknown].

8815
CSO: 5500/2030

TELECOMMUNICATIONS AGENCY CHIEF DEFENDS POLICIES

Stockholm DAGENS NYHETER in Swedish 14 Oct 81 p 10

[Report of interview with Tony Hagström by Kerstin Kåll]

> [Text] "The telecommunications agency actually has a serious ambition to keep its official and business rôles separate. That task has been performed satisfactorily up to now. The consumers have not been suffering. And nobody has ever been able to point out any case of abuse."

Tony Hagström, director general of the telecommunications agency, today answers the recent attacks on the agency in its double rôle as the agency which gives official approval and as a competitor of private firms.

The LKD [National Office Equipment and Computer?] association, which represents 85 firms in the office equipment and computer industry, has approached the government to discuss the double rôle. The mobile radio firm Comvik has applied both to the free-trade grievance officer (NO) and to the government to get help against what was viewed as an effort on the part of the telecommunications agency to establish a monopoly.

Dumping

The NO also has a case pending with a firm that considers that the agency "dumps" its telephone equipment at low prices to the detriment of the competitors.

What most disturbs the computer firms is the secrecy of the telecommunications agency's tests. The same technicians who develop the telecommunications agency's own equipment test the private competitors' secret prototypes.

Tony Hagström considers the concern unjustified.

"To guarantee objectivity we have taken certain measures in accordance with decisions of the Riksdag," he says. "We have set up a special unit with responsibility for testing and approving privately owned equipment. Decisions of that unit can be appealed to a special board that is made up of two representatives of the telecommunications agency and three appointed by the government."

But that is just an administrative board, the computer firms object. The actual testing is still done by technicians in the central laboratory of the telecommunications agency.

Secrecy

"If there is any supplier who is extra scared, we can apply special secrecy rules that prevent information from getting to the part of the telecommunications agency that is working with the same thing," Tony Hagström states.

LKD feels that the testing should be done by the State Testing Establishment, in accordance with a government bill of 1978 which says that the regulatory authority should not be simultaneously the national testing place.

"Last year the Riksdag decided with great unanimity that for economic and technical reasons it should be the telecommunications agency that does the testing," Tony Hagström points out. "It is only at the telecommunications agency and L.M. Ericsson that the telecommunications knowledge is to be found."

The State Testing Establishment has said that it can do the testing if it is possible to formulate the requirements set for a piece of equipment.

"I do not believe that," says the director general. "The technology that the telecommunications net is built out of has been introduced gradually over the last 50 years. Tests against the net require very extensive knowledge.

Needs Jobs

"Besides," Hagström adds, "it must be borne in mind that the State Testing Establishment has had economic problems since the move to Borås, and needs jobs..."

The West German telecommunications agency has conferred with private suppliers of telefax and teletex, for example, before the introduction [of the equipment]. In Sweden, according to LKD, the telecommunications agency has changed its earlier policy of consultation, and now decisions are made without contacts with the private firms concerned.

"Wrong," says Tony Hagström. "We have regular contacts with [the Ministry of?] Industry's telecommunications committee, which represents the customers. When it comes to the suppliers, it is obvious that you cannot talk in advance about what you are thinking of bringing out. You have to play by the rules of competition."

The fact that the private competitors were kept out of the teletex system for a year and a half and have since been let in through a special "filter" he justifies by concern for the net.

He says that there is no corresponding "filter" in any other country, but that it has awakened interest in the FRG, and subscribers with private equipment can get into the telecommunication agency's directory if they are prepared to share the costs.

"We cannot pay for our competitors' advertising," he says.

We asked Tony Hagström whether he sees any disadvantages in the telecommunications agency's double rôle. The attacks from private companies are probably increasing with the rapid spread of computer technology.

"When new markets with a lot of money open up to be served, various interests naturally want to get in and get a slice of the pie," he says. "You have to expect a squabble now and then, but you have to take it.

"The decision that the Riksdag made last year on drawing a line within the agency was a good decision, as I think we shall prove.

"That the suppliers go back to the government strikes me as a little odd. It may be regarded as a new try with a new government."

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END

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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 191

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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7 December 1981

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TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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BRIEFS

PAKISTAN, TURKEY PRESS AGENCY COOPERATION--Pakistan and Turkey signed two agreements this afternoon. One of them envisages a 3-year program of cultural exchanges. It is in continuation of the implementation of the cultural protocol of 1953 which is renewed every 3 years. It provides for the introduction of the Qaide Azam Fellowships to acquaint Turkish brethern with the deeds and ideals of the father of the nation and the ideology of Pakistan. It stipulates the exchange of educational experts, scholars, professors, educational (?aides) and books, bibliographies, publications, visual arts and folk (?song) troupes between Pakistan and Turkey. It also provides for exchange of artists and cultural experts, library equipment, sportsmen, coaches and cooperation between the ASSOCIATED PRESS OF PAKISTAN and the ANATOLIA NEWS AGENCY and journalists of the two countries. The holding of film festivals, book exhibitions and cooperation in the field of broadcasting and telecasting including the exchange of documentation also come under the purview of this program. The other agreement provides for mutual assistance in criminal matters. The federal law minister and the Turkish minister of justice signed the agreement on behalf of their countries. [Text] [BK240501 Karachi Domestic Service in English 1700 GMT 23 Nov 81]

AFGHANISTAN-MONGOLIAN ACCORD--BAKHTAR NEWS AGENCY of the DRA and MONTSAME NEWS AGENCY of the MPR signed an agreement in Kabul yesterday on exchange of news. According to the agreement, the new agencies will exchange news, bulletins and pictorial news and will help each other learn from their experiences in the matter of news reporting. [Text] [GF181800 Kabul in Urdu to South Asia 1330 GMT 18 Nov 81]

CSO: 5500/2045

BRIEFS

NEPAL-JAPAN RADIO CENTERS AGREEMENT--Letters concerning the construction work to certify an agreement signed between his majesty's government and the Government of Japan for the setting up of medium-wave radio transmission centers in Katmandu and Pokhra Valley as well as a studio in Katmandu were exchanged in Katmandu today. The construction work will be carried out at an estimated cost of 115 million rupees. Of this amount, 105 million rupees will be made available as assistance from Japan and the balance will be met by his majesty's government. According to the program, medium-wave transmitters of 100-kilowatt capacity each will be set up in (Bhaikopati) of Lalitpur and (Malipati) of Pokhra. A modern studio building equipped with all modern technical facilities will also be set up at Singhdarbar. The project will be completed within the next 15 months. On completion of the project, medium-wave broadcasting services can be extended to 55 percent of Nepal's total population. [Text] [BK241626 Katmandu External Service in English 1450 GMT 24 Nov 81]

CSO: 5500/2049

BRIEFS

SAYEDPUR TELEPHONE PLANS--Sayedpur (Rangpur) Oct 10--Minister for Posts Telegraphs and Telephones Mr Mayee dul Islam today said that a 600-line automatic telephone exchange would be commissioned at Sayedpur this year, reports BSS. Addressing a cross section of people here the Minister said that the Sayedpur automatic exchange would also be linked with nation wide automatic dialling system. The Minister urged the people to participate in the coming presidential election and cast their vote for the BNP nominee Mr Justice Abdus Sattar. Mr Mayeedul Islam eulogised the role of BNP candidate Justice Abdus Sattar and said that he (Justice Sattar) was an able lieutenant of late President Ziaur Rahman The Minister told the people that by electing Justice Sattar to presidency they would help the Government in implementing the unfinished part of the 19 point programme of President Zia. [Dacca THE BANGLADESH OBSERVER in English 12 Oct 81 p 1]

CHUNARUGHAT TELEPHONE EXCHANGE--Habiganj, Oct 13--A newly-established telephone exchange consisting of 30 lines including five trunk line was opened at Chunarughat recently. State Minister for Manpower Development and Social Welfare, Mr Syed Mohibul Hassan ceremonially inaugurated the telephone exchange in presence of large gathering. In this connection a meeting was held at Chunarughat TTDC hall with Mr Asaduzzaman Bhuiyan SDO Habiganj in the chair. Messrs Mir Muzammel Hussain SDO Telephone Habiganj, Advocate Md Atikullah, Syed Jamidur Rahman, Muslimuddin, and Jamrut Ali were among those who spoke on the occasion. Mr Nasiruddin-Choudhury ex-Minister attended as special guest. [Dacca THE BANGLADESH TIMES in English 14 Oct 81 p 2]

CSO: 5500/7024

MINISTER DISCUSSES COMMUNICATIONS IN NORTHEAST

Madras THE HINDU in English 30 Oct 81 p 11

[Text]

NEW DELHI, Oct. 29.

During his recent visit to the north-eastern States, the Information and Broadcasting Minister, Mr. Vasant Sathe, found a substantial communications gap between that region and the rest of the country.

Giving his impressions of the tour, Mr. Sathe said today that there was a case for augmenting radio and television facilities in these States. He was surprised, he said, to see evidence of an unusually large number of television sets in the areas, adjoining the Bangladesh borders.

On inquiry he was told that these were colour television sets, used for watching the programmes emanating from that country. In it he saw an additional justification for an early switch-over to colour television.

He would press, Mr. Sathe said for a mid-term appraisal of the Sixth Plan and utilise that opportunity to get sanction for additional facilities, with an outlay of Rs. 15 crores for broadcasting and Rs. 25 crores for television.

He saw a new urgency for the Plan scheme for a full-fledged television centre at Gauhati and the plans for television services in other areas through the Indian National Satellite and terrestrial transmitters. The Gauhati centre, however, would take three years to complete.

As regards broadcasting, three out of the six AIR stations to be set up during the Sixth Plan are to be located in the north-east region, he said. These are: Itanagar in Arunachal Pradesh, Tura in Meghalaya and Gangtok in Sikkim.

The power of the transmitters at Shillong in Meghalaya and Gauhati and Dibrugarh in Assam, is to be augmented to increase the range of these stations. Shillong will have a 100 KW medium-wave transmitter and a 50 KW short-wave transmitter. Gauhati 50 KW short-wave transmitter and Dibrugarh 300 KW medium-wave transmitter. A local radio station with one KW medium-wave transmitter is to be set up at Diphu in Assam.

Vividh Bharati channels are to be provided at six stations in the region. These include Gauhati, Imphal, Shillong, Kohima, Agartala and Aizawal.

The main reason for poor reception of AIR in this region according to the Minister, is the lack of power supply. Most of the high-power transmitters — 50 KW and above — remain off the air due to power shortage and AIR has to resort to operation of standby transmitters which can provide coverage of 15 to 20 kms. only. The State Governments have been requested to give top priority to AIR's requirements of power.

CSO: 5500/7026

TAMIL NADU BROADCASTING IMPROVEMENTS PLANNED

Madras THE HINDU in English 30 Oct 81 p 11

[Text]

MADRAS, Oct 29.

Coimbatore will have a Type 1 radio studio by the end of January next, Mrs. Kumudben M. Joshi, Union Deputy Minister for Information and Broadcasting, told newsmen here on Thursday. The civil works have been completed and airconditioning was in progress.

Spelling out the Sixth Plan schemes approved for Tamil Nadu, Mrs. Joshi said Nagercoil would get a local radio station with a 1 kW transmitter costing Rs. 50 lakhs. The Madurai Radio Station with a 10 kW transmitter to be put up at a cost of Rs. 1.32 crores would have its studio at Chokkulam and transmitter at Vilangudi.

Madras transmitter to be upgraded: The 20 kW transmitter in Madras would be upgraded to 200 kW costing Rs. 2 crores. The power of the existing regional transmitter would be increased from 10 to 50 kW.

Answering questions, the Minister agreed there was scope for improving the TV programmes. She had suggested that even the news programmes should have more 'visuals'. The talents of youth should be exploited she felt. In Delhi, the university and its affiliated colleges had been asked to tap the student talent. Training was being given to commentators for the Asian Games.

She said in reply to a question that not a single official had been 'victimised' or transferred since the present Government took charge at the Centre.

Services of casual artistes to be regularised: The casual artistes of TV stations who had worked continuously for 265 days in a year would be 'regularised' in service.

Site for relay transmitter in Kodaikanal being prepared: Speaking to pressmen at the airport later, the Minister said a site of about five acres for locating a relay transmitter and antenna at Kodaikkanal is in the process of being acquired.

CSO: 5500/7026

ECIL DEVELOPS NEW TRANSCEIVER, OTHER ITEMS

Calcutta THE SUNDAY STATESMAN in English 25 Oct 81 p 11

[Text]

HYDERABAD, Oct. 24.—Among the variety of products developed recently by the Electronics Corporation of India at Maulali, 20 km from here, two immediately catch attention: a handy facsimile transceiver and a cockpit voice recorder. The transceiver, which has been developed indigenously for the first time, can be used both as a transmitter and as a receiver, of documents, charts and pictures.

Indeed, anything that is put down on a paper of 210 x 297 mm size—handwritten, drawn printed or typed documents, and colour or black and white photographs—can be transmitted across the country, or even around the world, over regular telephone lines, to any place where telephone facilities exist.

As a group of visiting reporters watched, a printed sheet complete with a halftone picture was transmitted by one such device and received by another in six minutes. The transmitted image, as printed on an electro-sensitive paper, was an exact replica of the original.

According to ECIL officials, the transmission can be effected in either four or six minutes. Unquestionably a versatile device and a fast worker, it is said to have already gone through field trials successfully.

The cockpit voice recorder, or "black box" in airmen's jargon records all voice signals transmitted and received by the aircraft crew. It is protected against aviation accidents. In the event of such an accident, it provides valuable clues to its cause. All voice signals from the pilot, the co-pilot, the public address system and the cockpit area are recorded by the device. The system has built-in electronic circuits to suppress engine and turbine noise.

ECIL officials say their recorder is already on all Avro aircraft of Indian Airlines. It was, in fact, on the Avros that crashed near Poona and Tirupati, and is claimed to have proved its worth beyond question in those mishaps. Some 40 recorders have so far been supplied to HAL and one other agency, in addition to Indian Airlines. The Air Force is said to have placed a large order with ECIL for the device.

Also noteworthy is an advance railway signalling system, called Cab Signalling and Automatic Train Protection System, developed for one line of Calcutta's proposed Metro Railway, between Dum Dum and Tollygunge. The system is said to enable trains to follow each other within short intervals of 90 seconds, at high speeds of up to 80 kmph and with total safety. The system monitors continuously the different sections of the line as well as train speeds, calculate the safe operating speed limit for any train on any section of the line, and display it inside the driving cab.

The system, the officials claim, is extremely reliable "fail-safe". Failure of any component will automatically lower the operational speed limits or even stop the trains.

The visiting reporters were also shown the largest computer system made in India so far: System —332; a 32-bit computer system developed and manufactured for the first time in this country with total indigenous know-how and capabilities. Only six other countries in the world are said to have developed and manufactured computer systems of this class. The Departments of Atomic Energy and Space are said to be among those who have placed orders for this system.

CSO: 5500/7025

BRIEFS

BHASKARA-2 IMPROVEMENT OVER PREDECESSOR--Bangalore, Oct 9 (UNI)--Bhaskara-II, India's second earth observation satellite now awaiting transportation to the Soviet Union for its scheduled launch in the middle of next month, has undergone certain configural modifications aimed at improved performance and reliability. The modifications made in the light of the experience gained by the Indian Space Research Organisation (ISRO) in the working of its predecessor Bhaskara-I would enable a more sensitive measurement of total water content in the atmosphere. Certain changes have also been made to avert the snag that caused the malfunctioning of the television camera system in Bhaskara-I. Some of the changes made in Bhaskara-II to eliminate the anomalies encountered in Bhaskara-I include direct connection of the high voltage to the television tube in the camera system to offset the 'corona discharge' that caused the initial breakdown of the cameras of Bhaskara-I. Bhaskara-II would carry a two band television camera system for visible and near infra-red imaging and a three-frequency radio meter operating at 19, 22 and 31 GHZ frequencies. All the ground supporting systems including mission control at SHAR, Sriharikota as well as ground stations at SHAR, Ahmedabad and Bearslake at Moscow are getting ready for the inorbit operations of the satellite. [New Delhi PATRIOT in English 10 Oct 81 p 5]

INTERNATIONAL TELEX SERVICE--Subscriber dialled telex service to Mexico and Romania is available now, according to Overseas Communication Service (OCS), reports UNI. The link has been commissioned by the OCS in time for the forth coming visit of Prime Minister Indira Gandhi to these countries. With this, fully automatic subscriber dialled international telex service is now available to the following 52 countries:- Australia, Austria, Bahrain, Belgium, Brazil, Bulgaria, Canada, China, Cyprus, Czechoslovakia, Denmark, Egypt, Finland, France, Fiji, German Democratic Republic, Greece, West Germany, Hong Kong, Hungary, Italy, Iran, Iraq, Japan, Kenya, Kuwait, Lebanon, Malaysia, Maldives, Mexico, Netherlands, Newzealand, Norway, Oman, Philippines, Poland, Qattar, Romania, Saudi Arabia, Singapore, Spain, Lanka, Switzerland, Sweden, Taiwan, Thailand, United Arab Emirates, United Kingdom, USA, USSR, Yugoslavia and Zambia. [New Delhi PATRIOT in English 14 Oct 81 p 5]

NEW RADIO STATIONS--Vijayawada, Oct 16 (UNI)--Six new stations will be set up during the sixth five year Plan according to Deputy Director General of AIR P Venkateswarlu. He told newsmen here today that the stations would come up in Adilabad (Andhra Pradesh), Sholapur (Maharashtra), Kota (Rajasthan), Dippu (Assam), Nagarcoil (Tamilnadu) and Keonjhar (Orissa). He said 85 centres in the country

will transmit through satellite in future. He said AIR's aim was to create a national channel throughout the country. Mr Venkateswarlu said part-time correspondents, would be appointed in all district headquarters. [New Delhi PATRIOT in English 17 Oct 81 p 5]

BORDER AREA RADIO, TELEVISION--Bhopal, Oct. 17 (UNI)--Deputy Minister for Information and Broadcasting Kumud Behn Joshi today said that priority was being given to the border areas in the expansion of radio and television network since, in the absence of these facilities, the people in these areas were most likely to be influenced by foreign broadcasts. For this reason, she told a press conference here, Gauhati had been included among the cities where TV stations would be set up during the sixth Plan. Other cities to have TV station during the period are Ahmedabad, Hyderabad and Bangalore, she said. Adding that Indore would have TV only with the installation of the micro-wave relay system between Bombay and Delhi. As for TV in Bhopal, Miss Joshi said there was no possibility to this effect during the sixth Plan period. The minister said colour television would be introduced in Delhi during the 1982 Asian Games at a cost of Rs 24 crore. The Government has taken up a phased programme for the expansion of black and white TV network in the country. With the installation of the Insat-I communication satellite in 1982, the process would be accelerated, she said. [New Delhi PATRIOT in English 18 Oct 81 p 5]

'APPLE' FUNCTIONING NORMALLY--Bangalore, October 19 (PTI)--"Apple", India's first experimental communication satellite launched exactly four months ago by the European space rocket Ariane, is functioning well and the experiments are going on as scheduled, according to Prof. U. R. Rao, director of the ISRO satellite centre, here today. Asked whether one of the two solar panels which was stuck would be opened up, Prof. Rao said, "there is no proposal right now" as the space-craft had enough power and it was functioning well. On the remote sensing satellite (IRS one), Prof. Rao said the "paper design" was ready. [Bombay THE TIMES OF INDIA in English 20 Oct 81 p 6]

SATELLITE LAUNCHED FROM SOVIET COSMODROME--India's second earth observation satellite, Bhaskara II, is to be launched on Friday [20 November] from a Soviet cosmodrome. According to a tentative program, the intercosmos vehicle carrying Bhaskara II will take off at 1400 [0830 GMT]. Earlier, the Bhaskara was scheduled to be launched on Thursday [19 November]. [Text] [BK171623 Delhi Domestic Service in English 1530 GMT 17 Nov 81]

CSO: 5500/2049

ASIA-PACIFIC NEWS EXCHANGE TO START IN JANUARY 82

Karachi DAWN in English 13 Nov 81 p 18

[Text]

ISLAMABAD, Nov 12: News exchange network of the 18-member states of the Asia-Pacific News Agencies (OANA) is expected to start operating from the New Year's Day in 1982.

The decision to set up the network of the Asian-Pacific news agencies on reciprocal basis was taken earlier this month at the last meeting of the OANA in Kuala Lumpur.

The object of the proposed network is to promote flow of information and news among the member states in the interest of their common objective of better understanding and co-operating among the developing countries of the region. This should also help correct perspective of various countries of each other's problems and development activities which are often distorted or unadequately covered by the Western news agencies operating on cartel basis.

The Kuala Lumpur conference is said to have considered practical steps for effective use of the news coverage from the member countries and in this connection Sri Lanka, Bangladesh and Malaysia are believed to have agreeed on reduced tariff for news exchange via satellite. Pakistan is understood to be contemplating similar arrangement between Islamabad, New Delhi and Tehran as a beginning.

The OANA news network will be in addition to the steps taken under Islamic news agency and proposed non-aligned news pool for greater flow of information among the countries of the Third World.

CSO: 5500/4515

BALUCHISTAN TELEPHONE EXCHANGE TO BE EXPANDED

Karachi DAWN in English 15 Nov 81 p 4

[Text] QUETTA, Nov 14: The Central Telephone Exchange at Quetta will be expanded to 1000 connections within next few days.

This was stated by the Director-General, Telephone and Telegramme, Mian Munawarrudin, at a Press conference in Quetta. He said another 100 lines will be added to Quetta Exchange by the end of the current financial year, providing more telephone facilities for the subscribers in the Baluchistan metropolis.

The Director-General T and T said in all 1600 more telephone connections will be available for the subscribers in Baluchistan by the end of the current financial year.

He said a high frequency 200 lines model telephone exchange with N W D facilities will be commissioned at Uthal within next three months.

MICROWAVE LINK

Giving details of telecommunication facilities programme in Baluchistan the Director-General said his department proposed to provide an alternate microwave link between Karachi and Peshawar through major towns of Baluchistan including Uthal, Bela, Wadh, Khuzdar, Quetta, Loralai, D, I Khan and Peshawar. He said this link will greately enhance the telephone facilities in Baluchistan.

He said 75 public call offices will also be opened in the province to provide more telephone facilities for the general public. At these PCOs telegraph offices will also be opened.

He said 300 lines telephone exchange will be set up at Gaddani while the present single line telephone link between Quetta and Turbat will be provided an alternate line.

Replying to a question the Director General said Quetta has already been brought on international subscribers dialing and the facility is being availed of by 27 subscribers of the city. He said this facility can be extended to as many subscribers as might desire. —APP

CSO: 5500/4516

TELEPHONE EXCHANGE STARTS UP IN ORDNANCE FACTORIES

Islamabad THE MUSLIM in English 5 Nov 81 p 6

[Text]

WAH CANTT., Nov. 4: A most modern 3,000 lines electronic telephone exchange started functioning in Pakistan Ordnance Factories and its estate when Maj. Gen. Talat Masood, Chairman POF Board, performed the inauguration of the new Exchange this morning. This Electronic Exchange has been installed in collaboration with M/s Siemens Limited, West Germany and Telephone Industries of Pakistan, Hariput.

The new exchange will provide facilities for automatic call back, call waiting, call diversion, three-party conference, call transfers by extensions, watchman register system, paging system and direct inward dialling.

Speaking on the occasion, Maj. Gen. Talat Masood said that installation of the EMS 12,000 electronic micro-switching system was a landmark on the road of progress in the Communication system of POFs.

He called upon everyone to make the best use of the available facilities in order to maximise efficiency and production. He emphasised that engineers and technicians of POFs Telephone Exchange will have to strive hard for the maintenance and up-keep of this highly sophisticated system.

Thanking the Telephone Industries of Pakistan and M/s Siemens Ltd for their co-operation and congratulating the engineers and technicians of POFs Electrical Department for the installation of this new exchange, the POF Chairman asked the Chief Engineer Electrical to arrange further training of technicians for manning and maintaining the system.

Earlier, Izharuddin, Chief Engineer, Electrical, presented an address of welcome and outlined the salient features of the new exchange.

The POF Board chairman also visited the new exchange and discussed its working with the technicians.

CSO: 5500/4514

SIGNAL COMMUNICATIONS BRANCH CONDUCTS MILITARY SCIENTIFIC RESEARCH

Hanoi QUAN DOI NHAN DAN in Vietnamese 7 Oct 81 pp 1, 4

[Article by Le Nhu Tien: "Signal Communications Forces Promote Military Scientific Research to Support Combat and Build Up Their Own Branch"]

[Text] Following the issuance of the resolution of the Military Commission of the Party Central Committee on military science during the new stage, the party committee in the signal communications branch held a symposium to assess the military scientific research and to set forth guidelines for the next 5 years. Afterwards, many conferences were held to specifically and carefully discuss the intensification of military scientific and technical research within the branch and its subordinate units.

The branch has made it a habit of considering military scientific activities as a regular task of various sectors, levels, units and responsible organs which play a key steering role. On the basis of their aptitudes, experiences and scopes of activity, the various units have accepted research topics. The branch headquarters have also directed units to closely link military scientific research with military technique.

Dao Van Suu and the signal communication bureau in Military Region 1 have successfully studied the installation on a vehicle of a mobile central signal station by using the existing equipment (including restored means captured from the enemy and heterogeneous parts) in order to meet the requirements of the interbranch commander.

The advantage of this mobile central station is the possibility of rapid deployment and withdrawal and convenient mobility.

Based on the experiences in maintaining local signal communications during the war against the Chinese aggression, the signal communications forces in Military Region 2 have chosen the M. District as a pilot area to carry out research and to formulate theories on the maintenance of signal communications within the district and province in accordance with the method of conducting a local people's war.

To ensure signal secrecy, the Signal Communications Technique Institute has studied the ciphering and deciphering system used in signal and telephonic communications. The signal communications officers' training school is about to complete a program of general research into the art of organizing signal communications at the strategic level for joint combat operations. The Chi Lang Military Corps has accepted to apply a special topic entitled "the use of signal communications in combat" in order to develop the effectiveness of all simple signal communications equipments existing in the main force units and among the people.

As a hard-core organ which directly guides military scientific research, the military science bureau of the branch has also undertaken major topics such as the recapitulation of signal communications activities during the anti-U.S. war, the determination of a model system of regulations and statutes for the branch, the compilation of a system of documents aimed at maintaining signal communications during different campaigns, the perfection of special documents for the signal communications branch and activities and the simultaneous conduct of numerous activities to put the scientific task of managing data and maintaining signal communications into the right and regular track.

9332
CSO: 5500/4509

BRIEFS

RADIO PROGRAM CHANGE--The Polish radio fourth program will be beamed within a new skeleton pattern as of 31 August. These changes are meant to stress the specific character of program four, which is designed primarily with an eye toward various musical and literary features, without making it an elite program. All musical and some literary programs will be beamed in stereo, which is not available for other programs because only the fourth program transmitters have stereo capability. [Text] [AU061507 Warsaw TRYBUNA LUDU in Polish 29-30 Aug 81 p 5]

NEW TV TRANSMITTER--The testing of a new TV transmitter in the radio-television center at Sniezne Kotly in the Karkonosze mountains have been completed, and the transmitter is now beaming TV program one to Jelenia Gora, Legnica, Wroclaw and parts of Zielona Gora voivodships. [AU131422 Warsaw TRYBUNA LUDU in Polish 2 Sep 81 p 5]

CSO: 5500/3003

BRIEFS

TELCO STANDARDIZATION--The Trinidad and Tobago Telephone Company has decided to standardise on North American compatible equipment and procedures for its telephone development programme, according to its Telco News special issue recently. The company has also decided to bring in a Bell Canada Systems control expert to observe and work alongside local personnel in the Corporate Services Group. Meanwhile, the company has renewed its commitment to provide suitable training for employees to fit into the developing new toll network system. [Text] [Port-of-Spain TRINIDAD GUARDIAN in English 13 Oct 81 p 4]

CSO: 5500/7508

USSR TO HELP EXPAND TELECOMMUNICATIONS NETWORK

Kabul KABUL NEW TIMES in English 5 Nov 81 p 3

[Text] A protocol on development of communications was recently concluded between the Afghan and Soviet authorities. In an interview with the Kabul New Times a source of the Communications Ministry said that, though the protocol has not been finalized, with its implementation, considerable changes are expected in the sphere of telephone and telegraphic communications between the capital and provinces, telephoto and radio broadcasts.

The telephone and telegraphic communications will change to semi-automatic system. Due to the increase in communication channels, further facilities will be provided soon so that time is not wasted and the income rate can be increased.

The sphere of cooperation under the protocol will be the telephone and telegraphic communications for the provinces, telephoto, radio broadcasts and mechanization of the postal services.

Implementation of the protocol will expand possibilities for developing the provincial communication system four-fold. Automation is incorporated, and it is useful for both speedy action and increment in the income, the source added.

In connection with the modernisation of the postal system in Afghanistan and further facilities provided, the source said that lack of modern facilities exists in this sphere. On the basis of the protocol, most of the postal operations are expected to be mechanized, expediting the postal serivices.

In conection with the new building and its equipment the source added that the construction work is not over. Installation of the equipment will be implemented according to the protocol.

The following developments are expected in the five-year development plan of the Communications Ministry:

— Development of a system in the Kabul city telephone with a capacity for about 8,000 lines.

— Installation of a number of new automatic stations in Jalalabad, Kunduz, Pule-Khumri, and Charikar, among other places.

— Development of the automatic stations of Kandahar, Herat and Mazare-Sharif.

— Installation of surface station, connected with satellite 'Shamshad'.

— Building and installation of a 1,000-kilo-watt station for the radio medium wave.

— Installation of two new medium wave stations with a capacity for 100 kilo- watts each.

— Installation of a number of wireless stations to ensure better telephone and telegraphic communications in addition to the present stations.

— Extension of lines in the provinces which lack the channel system.

— Installation and activisation of the wireless stations with big power for ensuring international communications.

— Establishment of micro-wave connection towards east, west, north and south of the country and transmission of the television telecasts by these systems in addition to the telephone, telegraphic and telex communications.

— Construction of the huge building and installations of the equipments in Kabul and the like.

CSO: 5500/5309

BRIEFS

ARMENIAN, KURDISH BROADCASTS TO BEGIN--According to the CENTRAL NEWS UNIT report, the national and external languages unit of the Voice and the Vision of the Islamic Republic of Iran has announced in a statement the timing of its forthcoming programs in the Armenian and Kurdish languages. According to the statement, the program in the Armenian language will be broadcast every day from 2000 to 2100 hours [1630-1730 GMT] on FM wave, corresponding to 100.6 mhz, from Tehran and simultaneously in Esfahan on FM wave corresponding to 100.1 mhz. The Kurdish program, too, will be broadcast every day from 1600 hours to 2000 hours [1230-1630 GMT] simultaneously on the medium-wave on 535 meters corresponding to 558 mhz, and 461.5 meters corresponding to 639 mhz, and from 2100 hours to 2200 hours [1730-1830 GMT] on the medium-wave 469.5 corresponding to 639 mhz. The unit has requested our Kurdish and Armenian compatriots to send their viewpoints and proposals concerning these programs to the following address: Tehran, the national and external languages unit of the Voice and the Vision of the Islamic Republic of Iran, P.O. Box 98200, or by contacting the unit through telephone number 2196406. [Text] [LD171221 Tehran Domestic Service in Persian 1630 GMT 16 Nov 81]

NEW ESFAHAN TRANSMITTER--Esfahan's new 100-kw radio transmitter was put into operation at noon today in the name of Martyr Hojjat ol-Eslam Haj Seyyed Hasan Beheshtinezhad and in the presence of Mr Mohammad Hashemi, the managing director of the voice and vision of the Islamic Republic of Iran, and some of the officials of this organisation. This radio center, which was installed by the committed staff of the voice of vision of the Islamic Republic of Iran, consists of two 100-kw transmitter with a stand-by 50-kw transmitter to operate on the frequency of 1593 khz allocated for the second program. [Excerpt] [LD200306 Tehran Domestic Service in Persian 1630 GMT 20 Nov 81]

CSO: 5500/5308

ADVANCED DIALING SYSTEM EXPORTED

Jerusalem INNOVATION in English No 71 Oct 81 p 7

[Text]

Ramat Gan–Large exports of the TL-2060 scanning automatic telephone dialling system have been reported by Telak Ltd., developers and manufacturers of this equipment. Some years ago Telak attracted international attention with its then highly innovative TL-2001 dialler.

The new model TL-2060 is microprocessor-controlled and equipped with a memory capable of holding up to 240 telephone numbers. It can be instructed to call a long list of these numbers, desisting only after all the requested connections have been completed.

The system can differentiate between the various responses – busy, no connection, no reply, etc. – and reacts accordingly. Numbers will be called in the order given, unless priority ratings are assigned to one or more of those on the list; the system will 'do its utmost' to reach such priority numbers before the others. Three different degrees of priority can be assigned.

The TL-2060 can also be linked to property protection systems, such as burglar and fire alarms. When such alarms are set off, the dialler will immediately make the connection to the police or fire department, to inform them of the emergency and to call for help.

Telak products alrady are on sale in Scandinavia, Latin America and South Africa. A marketing agreement is presently being negotiated with a major U.S. distributor.

CSO: 5500/4706

PAN-AFRICAN NEWS AGENCY SESSION OPENS IN LAGOS

AB191615 Lagos NAN in English 1525 GMT 19 Nov 81

[Text] Lagos, 19 Nov (NAN)--Nigeria has established direct submarine telecommunications links with Abidjan, Ivory Coast and Dakar, Senegal, and plans are under way to open the Lagos-Nairobi satellite link for the PAN-AFRICAN NEWS AGENCY (PANA).

President Shehu Shagari said this in a message to the second conference of the West Regional Pool of PANA which began in Lagos today.

He said that Nigeria's internal telecommunications network and that of the NEWS AGENCY OF NIGERIA (NAN) had been re-inforced, and that arrangements had been made for high frequency teleprinter broadcasts to member-states of the pool.

President Shagari said that already, there was a provision of three-room office accommodation for the use of the PANA regional pool in Lagos.

He urged delegates to the conference to identify and agree on which member states in the pool were capable of constituting the nucleus of PANA West Regional Service and fix a firm date for the commencement of the service.

The president said: "Africa needs now, more than ever before, the facilities for the free flow of objective and patriotic news which only PANA can provide." He said that the imbalance in the flow of news between the developed and developing countries and the selfish manipulation and the domination of the situation by a few news agencies had not been corrected, and that "the situation is in fact becoming more serious."

President Shagari observed that Africa had remained a fertile group for neo-colonialist and racist manipulation because "We have lacked the tools to ensure the free flow of unbiased and unadulterated news within Africa and between Africa and the rest of the world."

The president's message was read on his behalf by the presidential adviser on information, chief Olu Adebanjo.

The director-general of PANA, Sheikh Ousmane Diallo, told the delegates that the agency had already prepared a formal legal instrument titled "Headquarters Agreement

between PANA and the general headquarters in Dakar, Senegal, and between it and regional pool headquarters." He said that the agency had also prepared the relevant regulations governing personnel and conditions of service, staff regulation and salary.

The director-general said that 24 member-countries had laid their financial contributions and that it expected more than 1 million naira--between 1979 and 1981.

Sheikh Diallo told the delegates that PANA was planning to establish a school of journalism for the Portuguese speaking countries of member-states in cooperation with UNESCO because of the manpower needs of those countries and their desire to participate actively in the activities of the agency.

The regional conference, scheduled to begin yesterday, was postponed because of the death of Governor Shehu Kangiwa of Sokoto State. A proposal today by Guinea that Nigeria should be the chairman of the meeting, while the secretary should come from Gambia, was unanimously adopted. A special message by the delegates condoled President Shagari on the death of the Sokoto State governor.

Present at today's meeting are delegates from Niger Republic, Guinea-Bissau, Guinea, Gambia, Senegal, Upper Volta, Togo and the host country, Nigeria.

CSO: 5500/2049

BOLAMA TO HAVE PERMANENT LINK WITH CAPITAL

Bissau NO PINTCHA in Portuguese 24, Oct 81 p 3

[Excerpts] Bolama will get a permanent telephone connection with the country's capital, NO PINTCHA learned in that city. The telephone link with Bissau has so far been operational only during working hours and connections were closed down on weekends and holidays. The reasons, according to the official in charge of the post office station, have to do with personnel shortage and fuel rationing which do not make it possible to operate the exchange permanently.

In analyzing the situation during the meeting, Comrade Orlando Nhaga, the current chairman of the Party and Government Committee of the Bolama-Bijagos region, emphasized that the new government team will have to address itself to this issue in order to find a viable way out. According to the official, this situation has had wide repercussions among the population and a solution to the problem can also in part solve the communications problems of the island.

It was proposed that the electric power plant of the state committee be used with a capacity of 220 kwh during its operating time (from 1200 until 1500 and 1900 until 2300) to run the telephone network. During the remaining hours, the CTT [post, telegraph and telephone] would operate with their own generator thus saving much more fuel, contrary to what has been happening until now, when the two generators are run simultaneously.

Telephone for Bolama-de-Baixo

On the other hand, a proposal for the hiring of two more officials will be presented to the SECT [Secretariat of State for Post Office and Telecommunications along with the installation of telephones at the airport and in Bolama-de-Baixo and Ga-Muria, towns located more than 20 kilometers from Bolama. At the time, a project for the installation of a telephone in Bolama-de-Baixo had been approved but only the line had been strung. In the meantime, according to the regional delegate, the line was cut by the local people who used the wire for various purposes, in particular to make craft objects.

5058
CSO:5500/5621

BRIEFS

MICROWAVE LINK--A major landmark in the development of telephone systems in Kenya will be the implementation of a microwave network linking Kitale, Lodwar and the Sudan. It would replace the current radio-call system. Another innovation will be the installation of a high-capacity microwave radio system with 960 channels capable of carrying television signals from Nakuru to Eldoret and Kitale, said the chairman of Kenya Posts and Telecommunications Corporation, Mr D.C. Mlamba, during a tour of Rift Valley Province by the board of directors of the corporation. The project is to cost over Sh. 55 million, he said, adding that the corporation would provide efficient and communications network nationally with increasing emphasis on the rural areas. Mr Mlamba said the corporation's first telecommunication programme aimed at opening up new exchanges in rural areas. He said Kaptarakwa would be served from Eldoret via Kaptaget. Centres like Chepkorio, Ainabkoi and Tongaren were being surveyed for exchanges, he added. Mr Mlamba said the apparent high demand for lines at Bahati and Gilgil was short-lived, while services at Elmentaita were adequate. He said the corporation would expand services in Nakuru at a cost of over Sh. 10 million. KNA [Text] [Nairobi DAILY NATION in English 31 Oct 81 p 4]

CSO: 5500/5624

IMPROVEMENT IN TELEPHONE ACOUSTICS PLANNED

Beira DIARIO DE MOCAMBIQUE in Portuguese 23 Oct 81 p 3

[Text] New antennas will be set up in Dondo. The listening quality on inter-city telephone calls and circuits running between provinces will be improved shortly in Beira with the installation, near Vila do Dondo, in Sofala, of antennas and new equipment in the telecommunications sector, it was reported yesterday in Beira by DIARIO DE MOCAMBIQUE. Jose Portraite, manager of the automatic telephone exchange in Beira, added that, as a result of the execution of this project, conditions will improve considerably since the Monte Ghiluvo exchange will cease to continue operating with a poor sound propagation and distribution level.

Portraite also said that these problems come up many times because the Chiluvo station is overcrowded; this situation will change completely following the installation of the new antennas plus some new equipment in Dondo.

As a matter of fact, because the equipment has reached the end of its useful life and because of some other technical conditions, making a phone call today, anywhere, primarily outside the city, is a real adventure almost anywhere in the land. There are quite a few cases in which calls either were not put through, or, if they were put through, the listening quality was very bad.

The same situation is true of telephone cables--constituting a big means of communication and a public utility--almost all of which have been damaged and nobody seems to care to repair them.

Further commenting on this situation, Jose Portraite said that "the damaged equipment in certain cases cannot be repaired; this is why it is difficult at this time to get these facilities to operate reliably. There are persons who damage the coin boxes and they even break them open and run away with the money."

As for the failure to install home telephones which interested citizens have applied for, it was announced that nothing is being done here because the capacity of the Beira exchange is fully taken up.

The CTA official in conclusion gave us an idea of all of the problems faced by that sector. He noted: The CTA services at this time are struggling to improve operations and to correct the existing abnormalities; we are struggling with a series of problems springing from the lack of spare parts for the maintenance of existing equipment. The spare parts we need can only be gotten abroad.

5058
CSO: 5500/5621

BRIEFS

KIRSH AID FOR TV--The Kirsh Group may be extending its range of activities in Swaziland to include television broadcasting. Negotiations are taking place with the Swaziland Government which could result in the Government stepping in to take over the ailing Swaziland Television Broadcasting Corporation. Electronic Rentals, which is the parent company of TV rental company, Visionhire, is at present under contract to the Swaziland Government to run STBC. Electronic Rentals has lost a considerable amount in its attempt to keep what appears to be an economically unfeasible television company running and is now apparently asking the Swazi Government to be released from its contract. Two surveys which the Government has commissioned, one of which was undertaken by the Kirsh Group, have shown that it is not economically viable to run a small television service. When approached on the subject, Mr Kirsh said the group had discussed the matter with the Swazi Government and was willing to take part in the management and equity of STBC. The Kirsh group owns a radio station in Swaziland.--Ann Crotty. [Text] [Johannesburg THE STAR in English 10 Nov 81 p 25]

CSO: 5500/5626

BRIEFS

SATELLITE TELECOMMUNICATIONS--Uganda's satellite earth station at Nkoma has successfully transferred to the new and latest model satellite Intersat-5 from Intelsat-4. The change was effected last Friday and through the weekend. Uganda Posts and Telecommunications Corporation engineers who supervised the transfer have been testing service effectiveness with telecommunications (?agencies) of other countries. Intersat-5 can accommodate 12,000 telephone conversations and two television channels simultaneously. In telephone conversations this doubles the circuits available in Intelsat-4. The first of a series of the new spacecraft was launched last December and the International Satellite Telecommunications Organization, Intelsat, which operates satellite communications, expects to launch more of this series and transfer most the international telecommunications traffic into the new satellite. [Excerpt] [EA190550 Kampala Domestic Service in English 1000 GMT 18 Nov 81]

CSO: 5500/2049

BRIEFS

COLOR TV DEAL--The Zimbabwe Broadcasting Corporation will receive electronic equipment worth $4 million from a French company, the managing director of Aftronic, Mr Monty Maughan, said yesterday. He said the equipment would be used to modernise studios and television transmitters. "The new equipment will not require too much maintenance, its of the latest make." Once the equipment is installed, Zimbabwe will have the most advanced television centre in Central Africa, he said. The equipment, which comes as a result of an agreement between the governments of Zimbabwe and France, would also be used to set up a new studio in Salisbury to produce local programmes. It was hoped that three television studios would eventually serve the city, he said. All the equipment, including the transmitters, were able to handle colour for television, he said. French engineers would give some technical assistance, including training, and negotiations were under way to train Zimbabweans in the relevant electronics fields. The first deliveries were expected in six months and the last should arrive within a year, Mr Maughan said. Meanwhile, buildings would be modified to accommodate the new equipment. Commenting on the role of the mass media, Mr Maughan said television was vital in any developing country. "It will help to cut down on the amount of rumours that tend to spring up." The most important role of television was in the field of education. It was not as bad as some people thought, because TV also projected the "good things". [Text] [Salisbury THE HERALD in English 24 Nov 81 p 11]

CSO: 5500/5630

BRIEFS

SATELLITE CONTRACT SIGNED--Munich. Signing of the Franco-German radio-television satellite financial contract. A Franco-German provisional financial contract for 80 million DM pertraining to the construction of TV-SAT/TDF-1 radio-television satellites was signed 10 September, one of the firms concerned, the aerospace engineering group Messerschmitt-Boelkow-Blohm (MBB), announced in Munich. According to a spokesman for MBB "a decisive step" has thus been taken towards the realization of the Franco-German governmental financial agreement for cooperation in this field which should go into effect at the end of 1981 or the beginning of 1982. The satellites are to be placed in geostationary orbit, thanks to the Ariane rocket, at the end of 1984. The spokesman mentioned that five firms are participating in the Frnaco-German TV-SAT/TDF-1 radio-television satellite construction program. Besides MBB, he added, there is AEG-Telefunken for the FRG, Aerospatiale and Thomson-CSF for France, and the ETCA Company for Belgium. /Text/ /Paris AFP SCIENCES in French 17 Sep 81 p 16/ 9824

CSO: 5500/2022

PRIVATE COMPANIES WANT TO EXPAND TELEDATA SERVICE

Oslo NORGES HANDELS OG SJOFARTSTIDENDE in Norwegian 14 Oct 81 p 8

[Article by Kare Gravdal]

[Text] Teledata's use is growing by leaps and bounds--in West Germany alone it is believed that there will be 1 million teledata subscribers by 1986.

Large department stores and the largest mail order firms in Europe have long listed complete inventories by teledata. Even today, German teledata offers information on restaurants listed geographically indicating their specialties and all or parts of their menus.

In Norway the Telecommunications Administration has conducted tests since the fall of 1979 in order to decide how a teledata service should be developed in Norway. Private testing is also underway--especially among the press.

From 20 to 22 October, a teledata conference and a large exhibition with many participants will be held at the Skinn Center in Oslo.

Incotel

"Honeywell Bull also wishes to make itself known here, even though we do not really have a complete line ready for the Norwegian market," public relations director Steffen Myklebust said recently at a meeting with the press. Nevertheless, Honeywell Bull wants to demonstrate that it is active in this field and is presenting its Incotel--a teledata system for both private and public use--at Teledata 81.

At the press conference, in which sales manager Erik Myreng and many other representatives from the company participated, it was explained that the heart of the Incotel system is the Incoterm minicomputer. Television screens that are modified to receive "viewdata" are connected to the minicomputer by way of either the ordinary telephone network or an internal switchboard. Contact is established when Incotel answers the subscriber's call and checks his identity. At the subscriber's request, information is transmitted to the screen at a rate of 1,200 bits per second. The subscriber selects his information through an answering channel operated at 75 bits per second.

'AFTENPOSTEN' BEGINS TELEDATA NEWSPAPER SERVICE

Oslo AFTENPOSTEN in Norwegian 20 Oct 81 p 41

[Article by Knut Lovstuhagen]

[Text] AFTENPOSTEN's teledata newspaper "Ajour" is a new feature in the Norwegian test project. It first went on the air 11 October and "publication" will end in a few weeks. The experience gained by AFTENPOSTEN during this relatively short test period will help create a basis for a later decision on the extent to which Norway's largest newspaper will be involved in the teledata field when the new medium comes into general use in this country.

"We have installed some equipment at various types of companies and attempted to involve those who already have teledata equipment as part of the Norwegian test project so they can watch our telecasts and comment on the presentation," said "Ajour" editor Morten Abel, who ordinarily is assistant editor of AFTENPOSTEN's business section. "We are interested in comments concerning how simple or difficult the equipment is to operate, how viewers feel about the choice of material in the teledata newspaper, what they think about the possibilities of teledata as a commercial medium, whether they could conceivably have teledata at the office or at home, and in general we are open to suggestions for new things we can do with a 'newspaper' such as 'Ajour.'"

Included in AFTENPOSTEN's small-scale test project are a large shipbuilding company, a branch bank, a travel agency, a medium-sized industrial company, and several prominent people of the press. "The latter are involved because we are also interested in professional reactions from our colleagues," said Abel, who also believes that AFTENPOSTEN's test broadcasts are being followed closely by press people involved in courses at the Institute of Journalism. An attempt was also made to install teledata equipment on an oil platform in the North Sea, but this attempt was abandoned because of practical problems.

"What type of material is presented in 'Ajour?'" "Since only a handful of people in the Norwegian test project have teledata equipment at home--the great majority of the equipment is found in industry and at various institutes--in addition to the latest news, we have concentrated primarily on business. For this reason, much of the material in 'Ajour' is related to the economy, but sports reports are also used extensively, since this medium is well suited to presenting standings, for example. The news is updated as often as we find necessary, several times each day."

AFTENPOSTEN's own teledata equipment is located in the main editorial room and, naturally enough, many remarks have been made by workers in the building. Some see this new medium as a newspaper, while others view it as television. Morten Abel stresses, however, that it is neither of these, but rather a unique medium in addition to newspapers and television.

"Teledata invites the use of colors and special effects, but AFTENPOSTEN is clearly demonstrating restraint in the use of special effects on the "pages.' We seem rather drab compared, for example, to 'Tele-Tidende,' produced by BERGENS TIDENDE."

"Our straightforward approach is designed with our viewers in mind. In the future our customers will probably pay by the page. Since there is relatively little material on each teledata page, we prefer to limit the use of special effects in order to include as much solid material as possible," Abel said.

"How do you see the future of a medium such as teledata?"

"Teledata will be a supplement to the newspapers, not a replacement. Since, as mentioned previously, there is a limited amount of space on each teledata 'page,' only headlines can be written. We can state that a company is operating at a loss, but to find out why there was a loss, the teledata reader must buy a newspaper. Having said this, however, I believe that in the future teledata could become a useful tool, especially in business. It will be possible to see on a TV screen in an office when planes are leaving for London. It will be possible to order a ticket using this medium, gather much practical information on the city or country one intends to visit, and even reserve tickets at a theater in London. Many possibilities may become available through teledata," Abel said. He believes that teledata's primary market will be in industry. If the medium is to enter the home, it must be made open to advertising. AFTENPOSTEN is becoming involved in teledata in order to keep up with developments and to influence the course of events.

9336
CSO: 5500/2028

GOVERNMENT EXPECTED TO DECIDE ON TELEDATA IN 1982

Oslo AFTENPOSTEN in Norwegian 20 Oct 81 p 41

[Article: "Political Position Probable Next Year"]

[Text] In the long-range plan presented by the National Telecommunications Administration early last year, it is assumed that teledata could be offered to industry beginning in 1983 and to private households 2 years later. However, the responsible authorities must decide if teledata is to be introduced in Norway. If estimates for when the service can be introduced are based on the Telecommunications Administration's long-range plan, the necessary political decisions must be made already in 1982. The Telecommunications Administration estimates that the teledata service would have 23,000 subscribers by the end of 1993.

"In my opinion, the politicians should soon know enough about teledata to reach a decision on whether or not the service should be introduced in this country," Kjell Olav Mathisen said at the Telecommunications Administration's Research Institute. Mathisen is head of the teledata research project that has been underway in Norway since 1979 and that is to be completed at the end of the year. Teledata projects are underway in a number of countries. Many of the projects are at an advanced stage. In Great Britain, for example, teledata is already a general service that is marketed under the name Prestel. Today the first conference and exhibition on teledata in Scandinavia opens in Oslo.

Over a 3 day period, about 250 participants and 30 speakers will deal with the possibilities and the development of this new information medium. Of course the computer industry is well represented at Teledata 81, but representatives of the press, publishers, public administrators, and the National Telecommunications Administration are also among the participants at the conference, which was arranged by the Norwegian Center for Information Science (NSI). In other words, if the politicians have difficulty reaching a decision on the future of teledata in Norway, it will not be from a lack of information.

A progress report on teledata in Scandinavia would indicate that Finland began commercial operation last year, Denmark will begin official testing next year, while tests are already underway in Norway and Sweden. The Swedes have also decided that commercial teledata service for industry should begin in mid-1982. Looking beyond Scandinavia, we see that teledata is a commercial service in Great Britain, while France and West Germany are in an advanced stage of testing.

At a press conference in Oslo on Monday the head of the British Prestel service, Richard Hooper, stated that almost 13,000 terminals are connected to the system at present. As much as 87 percent of these are found in industry and the rest are in private homes. About 650 information sources have contributed more than 200,000 "pages" to Prestel with each "page" containing 75 to 100 words. Earlier last year Prestel was expanded to a kind of world service, with subscribers in 20 countries. The largest groups using Prestel are travel agencies and financial institutions. Each month between 400 and 600 new subscribers are connected to the system.

Teledata testing began in Norway in 1979 and so far most of the Norwegian testing has been channeled through the activities of the Telecommunications Administration. Thirty information sources have fed 4,000 pages of information into a minicomputer at Kjeller outside Oslo. A total of 70 terminals have access to the data base via telephone lines, project leader Kjell Olav Mathisen stated at the press conference.

The experience gained with teledata so far in Norway indicates that this will be primarily a service for industry.

Sweden completed 2.5 years of teledata testing--or DataVision, as it is called--on 1 October this year and in June next year it will be offered to industry on a commercial basis. Expansion will keep pace with demand. The service will be set up initially for 3,000 subscribers. According to Bo Adolfsson of the Swedish Telecommunications Administration's headquarters, it is believed in Sweden that DataVision will be a viable information and communications medium for industry and a valuable supplement to other services offered by the Telecommunications Administration. At present there are no plans to expand the service to include private homes since no real market in this sector is anticipated before the end of the 1980's.

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END

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9 December 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 192

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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9 December 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 192

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UN DELEGATE TELLS DACCA POLICY ON INFORMATION FLOW

Dacca THE BANGLADESH OBSERVER in English 18 Oct 81 pp 1, 12

[Text] New York, Oct. 17--Bangladesh has reiterated at the United Nations that in an increasingly interdependent world the free flow of information among nations was of particular importance to developed and developing countries alike reports BSS.

Truthful, complete and objective information could go a long way in promoting better understanding and peaceful co-existence among countries and peoples, Mr. Shamsur Rahman, Editor of the Dainik Bangla and a member of Bangladesh delegation to the 36th session of the United Nations General Assembly said at a meeting here on Friday.

Making a statement in the Special Political Committee on questions relating to information, Mr. Rahman said that information and communication had emerged as being closely linked with the international development process, particularly with evolution of modern media technology. He added that Bangladesh was convinced that establishment of a new international information and communication order was part and parcel of the efforts to establish the new international economic order to bridge that gap between the North and the South.

Mr. Rahman stressed the importance of the United Nations Department of Public Information having closed working links with other international and regional organizations to encourage more media coverage of the United Nations activities. It should also strengthen its cooperation with the nonaligned news agencies pool, he added.

Expressing Bangladesh's happiness for the establishment of a United Nations Informations Centre in Dacca, Mr. Shamsur Rahman emphasised the clear need to strengthen the network of UN information Centre around the world. He reiterated Bangladesh's request made during the last general assembly session that consideration be given to the inclusion of Bngli as a language of the Asian unit of the United Nations Radio Services. He urged the United Nations to develop its programme on the job training for broadcasters and journalists from the developing countries.

He also expressed satisfaction of Bangladesh and 30 Least Developed Countries for effective public information activities undertaken by the United Nations Secretariat for Least Developed Countries Conference held in Paris last month.

CSO: 5500/7034

PLAN FOR SOUTH ASIAN COMMUNICATIONS GROWTH TOLD

Dacca THE BANGLADESH TIMES in English 18 Oct 81 pp 1, 12

[Text] Islamabad, Oct. 17--Bangladesh has put forward a 5 point action programme aimed at improving and reinforcing telecommunication facilities in south Asian countries, according to Bangladesh delegation sources, reports BSS.

The proposal was tabled by Bangladesh delegation leader Mr Malek at the first meeting of the study group on telcommunication for the proposed South Asian regional co-operation now being held in Islamabad. The proposals include setting up of direct telecommunication link among the countries of the regional training centre.

Most of the Bangladesh proposals have been welcomed by the participating countries who felt that those can go along way towards realising the objectives of developing a stable and dependable communications net work.

Speaking at the meeting of the study group, leader of Bangladesh delegation Mr Malik recounted some of the projects undertaken in Bangladesh to expend telecommunication facilities with neighbouring countries. The work on the project for direct communication link between Bangladesh and Nepal, he said, is going ahead while a similar proposal for establishing direct link with Bhutan is under active consideration.

Besides Bangladesh the meeting of the study group on telecommunications is being attended by delegates from Bhutan, India, Maldives Nepal, Pakistan and Sri Lanka, Pakistan is the co-ordination country of the study group on telecommunications in pursuance of a decision adopted at the foreign secretary level meeting of the South Asian regional cooperation held in Colombo earlyt this year.

CSO: 5500/7035

BRIEFS

CHANARUGHAT TELEPHONE EXCHANGE--Habiganj, Oct. 20--The newly-constructed 30-line telephone exchange consisting of 25 local and five trank lines was opened at Chunarughat thana headquarters recently. Mr. Syed Mohibul Hassan, State Minister for Manpower Development and Social Welfare formally inaugurated the Chunarughat telephone exchange in presence of a large gathering. In this connection a discussion meeting was held at Chunarughat Thana Training and Deveolpment Centre with Mr. Asaduzzaman Bhuivan S.D.O. Habiganj in the chair. Mir. Muzzammel Haque S.D.O. Telephone Habiganj Advocate Atikullah Syed Jamidur Rahman Mr. Muslim uddin Chairman Chunarughat U.P. and Mr. Jamrut Ali were among those who spoke on the occassion. Speaking on the occassion the State Minister stressed the need and importance of teleccmmunication system for overall development of the country and expressed the keen interest of the present Government for expansion and development of telecommunication net-work in the country especially in the rural areas. [Dacca THE BANGLADESH OBSERVER in English 22 Oct 81 p 3]

CHITTAGONG TELEPHONE EXCHANGE--Bangladesh Telegraph and Telephone Board installed 5000-line new EMD type automatic telephone exchange at Nandakanan, Chittagong on Saturday night. The new installation will help meet the growing and long pending demands of the people as well as different offices located specially at Nandakanan Korbaniganj Khatunganj Chaktai areas of Chittagong according to a Press release of the T & T Board issued in Dacca on Monday. With the installation of new exchange, the number of automatic exchanges has now stood at five having a 22600 telephone lines In addition to the above about 3000 applications will also be provided new telephone lines from this new exchange which will go a long way in meeting the long pending demands for telephone in Chittagong. [Dacca THE BANGLADESH OBSERVER in English 4 Nov 81 p 3]

CSO: 5500/7037

DETAILS ON INDO-SOVIET TROPOSCATTER LINK GIVEN

Madras THE HINDU in English 3 Nov 81 p 1

[Text] NEW DELHI, Nov. 2.

The Prime Minister, Mrs. Indira Gandhi, and the Soviet President, Mr. L. I. Brezhnev, exchanged greetings over the telephone today through the troposcatter communication link between the two countries, marking its inauguration.

In her message, Mrs. Gandhi said the newly-established troposcatter link was a milestone in Indo-Soviet economic, scientific and technological cooperation.

"We appreciate the willingness of the Soviet Union to share with us its technology for the benefit of the two peoples. I convey my congratulations to the Soviet engineers and technicians who have jointly worked with their Indian counterparts in achieving the impressive technological feat. I am sure this link will help in further strengthening Indo-Soviet cooperation", she added.

In his reply, Mr. Brezhnev said, "The link is yet another channel to strengthen the close ties between the Soviet Union and India, a new success in their dynamic, multifaceted cooperation which meets the fundamental interests of our peoples. I express sincere gratitude to Indian and Soviet workers, engineers and technicians who by their efforts have brought Moscow and Delhi still closer".

The inaugural function was attended by Mr. P. V. Narasimha Rao, External Affairs Minister, Mr. C. M. Stephen, Communications Minister, and Mr. V. A. Shamshin, the visiting Soviet Minister for Communications.

In a message sent through Mr. Shamshin for the occasion, the Soviet Prime Minister, Mr. Tikhonov, said the successful completion of the link reaffirmed the fruitfulness of Soviet-Indian economic, scientific and technical cooperation.

The setting up of the link, he said, coincided with the tenth anniversary of the Treaty of Peace, Friendship and Cooperation. It would facilitate direct contacts between the two countries and widen Indo-Soviet cooperation.

In her reply handed over to Mr. Shamshin, Mrs. Gandhi said the link would facilitate easier communication between the two countries and strengthen the existing friendly relations.

Protocol: The troposcatter link has been commissioned four years after the two Governments signed a protocol for it—to set up a link between Chrar-e-Sheriff (about 25 km from Srinagar) and Dushanbe (Soviet Union). The distance of the transmission path is around 885 km.

The protocol was signed after successful completion of the experimental tests on technical feasibility, of the proposal by a joint team of experts.

The troposcatter diffraction method, as it is called, which has been adopted for the link will provide a reliable, round-the-clock high-quality transmission medium for telecommunication services between the two countries.

It will effectively supplement the communication facilities now available via the Intelsat global satellite communication system and serve as a strategic diversity transmission medium during planned and unforeseen interruptions in the satellite communication system.

The Overseas Communication Service (OCS) of India is playing a vital role in the establishment and maintenance of the link.

The system has a capacity of 12 channels at present and it can be increased to 24 channels with corresponding increase in the power of the transmitter, if required, to meet the needs of the growth in traffic.

Telephone, telex and telegraph services can be provided on the troposcatter system.

The troposcatter diffraction method was chosen for the direct link in view of the very high altitude mountainous terrain between India and the Soviet Union.

Supply of equipment: The antennae for both Srinagar and Dushanbe terminals were supplied by the Electronics Corporation of India Ltd. (ECIL) and the UHF rearward communication link equipment (between Chrar-e-Sheriff and Srinagar) by Indian Telephone Industries.

The transmission and receiving equipment for the tropo system was supplied by Promashexport of the USSR.

The cost for the Indian terminal has been Rs. 390 lakhs, with a foreign exchange component of Rs. 92 lakhs.

The new link will not only provide a direct means of communications between India and the USSR entirely under the control of the two countries, but also carry transit traffic from the countries neighbouring India and the Soviet Union, improving the economic viability of the operations.

With the availability of stored programme control (SPC) type electronic gatewey telephone and telex exchanges at the OCS gateway centre in India, automatic transit facilities can be provided for such services.

Besides public telephone, telex and message telegram services, leased circuits for press, aeronautical, meteorological, and private services can also be provided via this system.

CSO: 5500/7028

PROBLEMS WITH SATELLITE COMMUNICATIONS TOLD

Bombay THE TIMES OF INDIA in English 6 Nov 81 p 6

[Text]

BOMBAY, November 5: Satellite communication does create problems for which the authorities have no solutions yet.

One problem, for instance, is how to prevent the use of domestic circuits for international calls.

Another concerns television coverage. A television programme relayed by satellite could reach thousands of towns and villages in India, but finding a suitable programme in a language widely understood would be a problem. A programme for the national network should be such as to appeal to most people, if not all.

Frequency congestion is yet another problem. It has forced the posts and telegraph department away from the main towns for locating its earth stations, Mr. B. S. Murthy, general manager, satellite project, New Delhi, told the Institution of Electronics and Telecommunication Engineers here yesterday. He was speaking on "Overview of satellite communication."

The earth station for Bombay had to be located beyond Thane and that for Ahmedabad about 65 km. away from that city.

DETECTING WEAK SIGNALS

Other problems concerned, for instance, provision for a larger amount of on-board power to keep the satellite in correct position and transmitters with higher powers to detect weak signals.

Despite disadvantages, the geo-synchronous satellite had gained popularity because of the advances in technology, both in the launch vehicles and in the satellite communication transponders, he said.

With the recent successful lanching of the space shuttle, further hopes had been raised about reduction in the launch cost of communication satellites, Mr. Murthy said.

About India's INSAT programme, he said it had been decided to go in for a composite multi-purpose satellite serving the needs of telecommunications, meteorological services and television distribution and broadcast. Each of the two satellites would cost Rs. 57 crores.

Mr. G. D. Dubey, who presided, remarked that while the investment cost per circuit had come down from about $23,000 to the present $2,000 in 15 years, none of it had been passed on to the subscriber. Dr. P. B. Parikh, chairman of the institution, welcomed the guest. Mr. G. S. S. Murthy, honorary secretary, proposed a vote of thanks.

CSO: 5500/7029

INADEQUATE TRANSMISSION LINES HINDER COMPUTERIZATION

New Delhi PATRIOT in English 7 Nov 81 p 9

[Text] The sophisticated and expensive computerised reservation system of Air India is repeatedly throwing the management and the traffic into confusion by breaking down at critical moments.

Air India, which is the first organisation in India to own a large scale computer network, which is also linked to the international airline data grid of the SITA (The Society of International Airlines), has discovered that the sophistry of the system is being set to naught by the repeated failures of the P and T cables linking the terminals with the computer.

The inability of the P and T to guarantee a fool proof communication network for transmitting data was one of the major items of discussion at the conference of the business group of the Computer Society of India being held at Vigyan Bhavan.

The P and T and the Communications Ministry, which are conducting research in the use of P and T lines for data transmission for country wide computer networks predicted for the next decade, promises it will enable a consumer to 'dial' through 'terminal' any computer anywhere in the country for transmission of data and results within two or three years.

With computers becoming necessary tools for data processing in decision making and control and for helping engineering and processes through Computer Aided Design (CAD), the linking of terminals with each other, and with the main computer, becomes the crucial factor in further development.

For large concerns which use a computer for a long time, and transmit considerable data at a given time, leased P and T cables are used. Air India in fact has 'bought' its own cables by paying P and T to put in special full time 'dedicated circuits' for its busy areas. Other users make use of normal teletype and telephone cables.

According to Air India officials, the reliability of the P and T cables is much below international standards. Most of the Faults are in local. In many such breakdowns in Calcutta, Delhi and Madras, the reservations system broke down as the terminals went 'dead.' Harried booking clerks had a hard time convincing irate passengers.

No were the faults confined to general lines. In the 'dedicated special cables' also, the airlines is fighting a losing battle with the P and T. The airlines has been representing to the Communications Ministry for many months now to revise regulations.

However, the Communications people maintain that once a 'dedicated line' has been brought (and Air India paid about half of the Rs 65 lakh for cable linking Santa Cruz with its headquarters at Nariman Point), they cannot be allowed to make use of other cables if the main cable breaks down, because of indescriminate digging or water seepage or other faults. The airlines wants guaranteed cable performance or alternate channels for transmitting data.

Air India, which uses a Univac 1100/12 computer, has about 200 terminals in its various offices and is also linked to the SITA computer for international bookings in the non-European sector. It cooperates with British Airways for Europe. The terminals at Delhi have the worst reliability and breakdowns average more than 8 per cent as against the acceptable 2 to three per cent. In fact, analysts have discovered the old teleprinter system to be more reliable.

The Steel Authority of India has also complained that the P and T are not heeding its request for teleprinter lines for the computer system. Indian Airlines, which is losing on its bookings, has also sought a better deal.

For P and T, senior technical officials hold promise of improved performance in future years.

CSO: 5500/7030

WRITER REVIEWS PROGRESS IN REMOTE SENSING

Madras THE HINDU in English 11 Nov 81 p 8

[Article by N. N. Sachitanand: "Wide Compass of Remote Sensing"]

[Text] SPACE science has two facets — the spectacular and the utilitarian. To the first genre belong manned mooneshots, spacecraft to the planets etc and to the latter application satellites, space laboratories and the like.

The Indian Space Programme, with its blushingly modest budget, has been tailored to get the maximum out of every rupee spent. Hence, its thrust is strictly utilitarian with the emphasis on telecommunications, weather observation, resource survey and similar "down-to earth" functions.

One such application of space science is remote sensing. As the term suggests, it implies sensing from a distance. The advantage: one can get an integral picture of developments over a much wider area of earth far more quickly and easily than if one were an earth-based observer.

On the earth one can miss the wood for the trees. Through remote sensing using an orbiting satellite, an encompassing picture of the entire forest is obtained.

For example, with a satellite-based camera, the status of an entire complex river basin can be captured in one snap. On the ground, such information could be obtained only after months of painstaking and laborious surveys. Similarly, one sweep of a satellite over the Western Ghats area could generate such information on the state of denudation there that may be extremely difficult to gather by a host of ground based observers due to the difficult terrain.

There are a host of uses to which remote sensing from space is being put. Some of these are topographical studies, resources surveys, flood forecasting mapping and coastal erosion mapping, qualitative estimation of forest cover, desertification studies, snow cover mapping, cartography, evaluation of atmospheric pollution, crop forecasting surface oceanography, mineral prospecting and of course, the sinister military spying.

Basically, remote sensing from space is achieved in two ways. One is the simple visual technique in which a video camera with telescopic lenses mounted on the satellite peers down on earth and records whatever it observes. The images are converted electronically into radio pulses which are beamed to a receiving station on earth where they are reconverted into visuals.

The area of earth covered and strength of detail or 'resolution' of the images perceived depend on the power of the lens and its angle as well as the orbital height of the satellite.

There are also computerised image enhancing techniques available on ground to improve the resolution. It is rumoured that the U.S. has spy satellites which can make out, from a couple of hundred km out in space, individual soldiers on parade in Moscow's Red Square.

The other method of remote sensing from space is to use satellite-based instruments to measure the optical radiation emanating from the earth. Depending on its temperature, surface and other physical characteristics, every object on earth radiates into space a certain pattern of microwaves which is called its spectral signature. Objects also reflect incident radiations in a way that is different for different objects.

When the satellite is making a pass over the area to be observed, on-board sensors called radiometers measure the radiation patterns of the objects on the earth below. These measurements are passed on to earth-based stations via radio

On earth, based on previous empirical data, the characteristic radiation patterns (amplitudes and frequencies) can be interpreted to give information about the state of the observed objects.

The Indian Space Research Organisation's remote sensing programme commenced with the launching of the SEO-I (Satellite for Earth Observations-I) later christened Bhaskara-I on June 7, 1979, from a Soviet cosmodrome using a Soviet intercosmos rocket. The 444 kg satellite designed and built in ISRO's satellite centre at Bangalore, carried on it two TV cameras and three microwave radiometers.

The TV cameras were supposed to take pictures of an area of 325 by 325 km as the satellite passed over India and operate in the visible (0.6 micron) and near-infrared (0.8 micron) wavelengths. The microwave radiometers were to collect data at 19 gHz and 22 gHz frequencies and be used mainly for studying the state of the sea-surface, water vapour content in the atmosphere about the ocean and other related parameters which could improve our understanding of the monsoons and development of cyclonic storms over the adjoining seas. The satellite was also to be used as a communications station, relaying to the main earth stations at Ahmedabad and Sriharikota, weather-related data transmitted from remote observation stations at places like Minicoy and Car Nicobar. Bhaskara's orbit was near circular with an apogee of 557 km and perigee of 512 km.

Bhaskara-I gained almost instant notoriety when its TV camera system failed to function because of some high voltage corona problem in the system. The microwave radiometer system, however, functioned perfectly with a resolution of one degree Kelvin in measuring the microwave brightness temperature. The microwave studies carried out over the seas adjoining the Indian land mass generated important meteorological and oceanographical parameters such as the atmospheric water content and surface winds over the ocean. These are extremely difficult to obtain by conventional means.

Among the land-based applications to which the radiometer data was put, special mention must be made of the attempt to delineate the Luni river flood in Rajasthan. Such a study has demonstrated the possibility of flood mapping under cloudy conditions. Incidentally, microwave frequencies, unlike visible and infrared radiation, can penetrate cloud cover.

By mapping the microwave brightness temperature distribution over the Indian land mass it is possible to get useful information on parameters like soil moisture which should help in agricultural operations. Among those who utilised the microwave radiometer data from Bhaskara are the Indian Meteorological Department, the National Institute of Oceanography, Roorkee University, Jodhpur University, Central Flood Commission, Government of Tamil Nadu etc.

After strenuous ground-based simulation studies it was possible for the scientists connected with Bhaskara-I to reactivate the TV camera system. With the aid of the TV camera, it was possible to map the Indian subcontinent several times and provide useful information on forestry, hydrology, large water and land bodies and, of special interest, the snow cover on the Himalayas.

The last can yield valuable data on flood forecasting in the rivers of the Indo-Gangetic Plain.

An interesting and little known aspect of the performance of Bhaskara-I is the data gathered by its infrared horizon sensor which is used for orienting the satellite with reference to the infrared horizon of the earth. This sensor monitored radiation of infrared emissions from the earth's carbon dioxide layer located at a height of 40 km. This measurement is of considerable interest to environmentalists.

The next in the series of remote sensing satellites designed and made in India is the SEO-2. Essentially of the same design as the Bhaskara-I, its radiometer has an additional microwave measuring frequency, the 31 gHz band which will enable the sensor to distinguish between liquid water and water vapour in the atmosphere over the ocean.

Care has been taken to eliminate in SEO-2 the fault which led to the TV camera breakdown in Bhaskara-I for earth resources survey purposes.

The IRS will be a much more complex three axis stabilised, 550 to 600 kg class spacecraft carrying a multispectral scanner, a linear imaging self-scanning system and a passive microwave radiometer. It will be placed in sun synchronous orbit at a nominal altitude of either 50 or 100 km.

CSO: 5500/7032

BRIEFS

GEOSTATIONARY SATELLITE PLANS--Hyderabad, November 2 (PTI)--The government of India plans to launch the "geo-stationary satellite" for weather observation over the Indian Ocean by April 1982, Dr. Venkateswarlu of the meteorological centre here, said today. This satellite will replace the present polar-orbiting satellite, he told newsmen. He said the new satelliite would be launched with the joint efforts of the ministries of civil aviation, communcation, and information and broadcasting ad the department of science and technology. The meteorologist said the proposed satellite would be positioned over the equator near Sri Lanka, and the idea of having this particular satellite was to cover the entire sub-continent and give frequent readings. [Bombay THE TIMES OF INDIA in English 3 Nov 81 p 1]

INDIA-SRI LANKA MICROWAVE LINK--Madras, Nov 7 (PTI)--The Indo-Sri Lanka micro-wave link connecting Colombo with Madural and the Southern Region is ready and likely to be commissioned before the year-end. A top P and T official told PTI here today the 960 channel six megahertz broad band link would soon help the entire country to have a communication link with Sri Lanka. Officials of the two countries would be meeting shortly in India to finalise the tariff and other formalities. The foolproof micro-wave link would replace the existing one between the two countries which was by an overseas hop across the sea off Rameswaram and was weak and prone to faults the official said. [New Delhi PATRIOT in English 8 Nov 81 p 5]

AHMEDABAD-DELHI SATELLITE LINK--Ahmedabad, Nov. 11--Ahmedabad and Delhi will be soon telephonically linked through India's first experimental communication satellite, APPLE. The engineers of the Space Applications Centre (SAC) and the Posts and Telegraphs Department are currently engaged in linking the telephone exchanges of Ahmedabad and Delhi with their respective earth stations, a spokesman for the SAC told UNI today. He said the satellite telephonic system would be similar to the Subscriber Trunk Dialling (STD) facility but the former would be more reliable and efficient that the latter. "There would be no disturbances and the sound would be clear", he added. Though APPLE had the facility for about 50 telephonic channels, it would only have four to six channels between Ahmedabad and Delhi, this being an experimental satellite. [Madras THE HINDU in English 12 Nov 81 p 7]

CSO: 5500/7033

SATELLITE TECHNOLOGY ON COMMUNICATIONS APPROVED

OW270349 Tokyo KYODO in English 0327 GMT 27 Nov 81

[Text] Tokyo, Nov 27 (KYODO)--This year's white paper on communications proposed Friday to introduce communications satellite technology into anti-disaster measures in an emergency.

Posts and Telecommunications Minister Ichiro Yamanouchi presented the report on communications for fiscal 1981 before a cabinet meeting Friday and the report was approved.

The annual report also proposed to study connecting communication networks of the National Land Agency, the Construction Ministry and the Fire Defense Agency to make them useful in the event of an emergency.

The report on the main theme "Disaster and Communications" described communication media in recent years as "the central nerve in the society" which has permeated through social and family life as well as business activities.

The report mentioned countermeasures against disasters by means of various communication media such as data communications, telephone, television and radio, in view of their respective characteristics.

In the case of international communications, the ministry plans to set up central stations in Tokyo and Osaka to divide operating functions and to build a central station in Oyama, Tochigi Prefecture, northeast of Tokyo, to start operation in 1985, the report said.

The ministry is also doubling communication transmission routes from the present single route for both international and domestic communications, it said.

It also said a system to regulate general telephone service has been developed for smooth telephone communications for rescue and restoration activities in an emergency.

The Japan Broadcasting Corporation (NHK) and other broadcasting stations have proceeded with disposition of mobile broadcasting installations and the police now have a nationwide shortwave communication network as well as their own communication circuits.

The Japan National Railways (JNR) also introduced a shortwave wireless circuit and has been going toward making the circuit microwave in line with electrification of railways, the report said.

The ministry is also developing an "urgent broadcast system" in which televisions and radios are automatically switched on to give people forecasts and warnings against an emergency.

Private corporations are going on doubling computer circuits from the present single circuit and decentralizing date files against a computer accident.

The report also added mails totaled 15.7 billion letters in fiscal 1980, up 3.1 percent over the previous year, subscribed telephones about 39 million, up 3.4 percent, and subscribed television viewers 29.2 million, up 1.1 percent.

CSO: 5500/2056

BRIEFS

TV BOOSTER STATIONS--Major General Mujibur Rahman Khan, information secretary and chairman of Pakistan Television Corporation, said in Karachi last evening that three more boosters were being set up for larger coverage by the PTV network. He was speaking at a ceremony to mark the best TV commercial awards competition for the year 1980-81 at Hotel Inter-Continental. He presented 20 awards to the winning advertising agencies. The three booster stations were being set up at Razmuk, Sibi and Pasrur. At present there are five centers and 12 booster stations in the country. In addition to this, he said, the government was also studying plans of a separate channel for educational programs. For the guidance of the advertisers and the advertising agencies, a code of conduct has been prepared which will soon be made public, the information secretary said. The advertising agencies will be consulted before the code is made public. They will also be represented at its central advisory committee. Agency reports add: Maj Gen Mujib said this "ethical code" was being prepared in accordance with the government's "sincere efforts" to introduce Islamic system within the country, an objective towards which good progress had been made already. He said it was in this context that the government was keeping in view the improvement of the mass media, and added that the president of Pakistan had stated anti-Islamic activities would not be permitted in this sector. Earlier, Mr Ziaddin Jeddi, controller, sales, PTV, in his brief welcome address said that the advertising companies were cooperating with the PTV authorities in ensuring that commercial ads shown on TV were in keeping with national values. APP. [Excerpts] [GF301455 Karachi DAWN in English 29 Nov 81 p 10]

CSO: 5500/2056

BRIEFS

SHAANXI RESTORES COMMUNICATIONS WORKS--Shaanxi Province is quickly restoring postal and telecommunications work which was seriously damaged by floods. By the beginning of November, the great majority of the first-level main long distance communications lines with the central authorities and all second-level main long distance communications lines within the province had been repaired. Of the 231 communes whose telephone lines were damaged, 183 communes whose telephone lines have now been repaired can communicate by telephone. The province has completely cleared the backlog of mail which piled up due to the suspension of railway and road traffic. The posts and telecommunications subbureaus and offices which were damaged have now been repaired and are open for business. [HK180857 Xian Shaanxi Provincial Service in Mandarin 1130 GMT 13 Nov 81 HK]

MICROWAVE RELAY EQUIPMENT--According to a report by the Suzhou People's Broadcasting Station, China's first microwave relay equipment for the simultaneous transmission of both television and radio signals has recently been examined and approved for its use in the whole country. This relay equipment has been specifically produced to solve problems concerning television and radio transmission and wave propagation in our country. The range of this equipment is 1,000 km with 24 relay terminals in between. This equipment can be used for simultaneous one-way or two-way tranmission of a single channel of color video signals with audio modulation, two channels of speech signals or a single channel stereo program. It can also be used for transmitting telegram, telephone and facsimile signals. Moreover, it can be connected to a television channel at the ground station of a communication satellite to directly feed the intermediate-frequency signals received from the satellite through the microwave circuit. The success in devising this equipment has provided us with fairly advanced equipment for the transmission, popularization and development of television and radio programs in our country. [Text] [OW280425 Beijing Domestic Service in Mandarin 1200 GMT 25 Nov 81]

CSO: 5500/2056

BRIEFS

MILITARY MICROWAVE SYSTEM--As part of the country's defense and military preparedness, the government has set up a 130 million [as heard] digital microwave communication system in Mindanao. The network is part of a 5-year project to speed up communications from all the units of the country's armed forces. When the project is completed, military installations in any part of the country can contact any AFP [Armed Forces of the Philippines] unit anywhere through direct dialing. The project seeks to interlink all military units in the country with AFP headquarters in Camp Aguinaldo. [Text] [HK190431 Baguio Mountain Province Broadcasting Corporation in English 0400 GMT 19 Nov 81]

CSO: 5500/4518

BRIEFS

'YONHAP'-'EFE' AGREEMENT--Seoul, Nov. 26 (YONHAP)--Korea's YONHAP News Agency began transmitting its English news to Spain's EFE News Agency Thursday, in accordance with a bilateral news exchange agreement. Under the pact, signed by YONHAP President Kim Song-chin and Kim's EFE counterpart Luis Maria Anson in Seoul and Madrid respectively, on Nov. 16, the Spanish agency, based in Madrid, will also send its news to the Korean agency. YONHAP news items will be transmitted to 23 countries in Latin America simultaneously, via EFE, from which most of the Latin American nations receive their foreign news. [Text] [SK260058 Seoul YONHAP in English 0042 GMT 26 Nov 81 SK]

CSO: 5500/2056

BRIEFS

'OANA' EXPANDS MEMBERSHIP--Hanoi, Nov 10 (VNA)--Vietnam has become one of the nine new members of the Organisation of the Asian and Pacific News Agencies (OANA). The admission took place at a recent OANA meeting in Kuala Lumpur where Vietnam was represented by a delegation of Vietnam News Agency led by general director Dao Tung. The Lao News Agency PHAOSAN PATHET LAO (KPL) was elected to the nine-member OANA executive committee. [Text] [OW100821 Hanoi VNA in English 0714 GMT 10 Nov 81]

'VNA' - 'BERNAMA' AGREEMENT--Hanoi, 12 Nov (VNA)--An agreement on exchange of news reports between Vietnam news agency and its Malaysian counterpart BERNAMA was signed in Kuala Lumpur on Tuesday with a view to promoting understanding between the two countries. Signatories were V.N.A.'s director-general Dao Tung and BERNAMA's director-general Ahmad Mustapha Hassan. The signing ceremony was witnessed by Vietnamese Ambassador Vu Bach Mai and BERNAMA's leading officials. [Text] [OW121836 Hanoi VNA in English 1506 GMT 12 Nov 81]

INDUSTRIAL PROJECTS--Hanoi, 20 Nov (VNA)--A system of telephone and telegraph lines more than 2,000 kilometres long linking Hanoi to Ho Chi Minh City and Minh Hai Province has been commissioned after two years' building. It has 66 telephone channels and hundreds of telegraph channels. [Excerpt] [OW291445 Hanoi VNA in English 1451 GMT 20 Nov 81]

CSO: 5500/4518

BRIEFS

ALGERIAN-BULGARIAN AGREEMENT--The minutes of a cooperation agreement were signed this afternoon between the radio and television organizations in Algeria and Bulgaria for the year 1982-83. The agreement was signed on behalf of Algeria by 'Abd al-Rahman Laghouati, director general of Algerian Radio and Television, and by Mr Ivan Slavkov, the director general of Bulgarian Television, on behalf of Bulgaria. The two sides agreed on the need to double the exchange in the radio and television fields through broadcasting important programs giving information about the two countries.[Text] [LD290310 Algiers Domestic Service in Arabic 1900 GMT 28 Nov 81 LD]

CSO: 5500/2056

BRIEFS

SWEDEN GETS PHONE SYSTEM CONTRACT--The L.M. Ericsson Company is about to reclaim Iraq's telecommunications markets to Sweden as the firm's proposal won over keen competition for constructing a telephone system. The value of the contract is 750 million Swedish kronor, and with a possible additional agreement, it can go up to 1 billion kronor. Adding to the value of the contract is the fact that it incorporates purchases worth 300 million kronor of Swedish materials, mainly cables and equipment needed for the system. [Text] [Helsinki HELSINGIN SANOMAT in Finnish 2 Nov 81 p 30] 9571

CSO: 5500/2032

PAN-AFRICAN NEWS AGENCY SESSION OPENS IN LAGOS

AB1910l5 Lagos NAN in English 1525 GMT 19 Nov 81

[Text] Lagos, 19 Nov (NAN)--Nigeria has established direct submarine telecommunication links with Abidjan, Ivorty Coast and Dakar, Senegal, and plans are under way to open the Lagos-Nairobi satellite link for the Pan-African News Agency (PANA).

President Shehu Shagari said this in a message to the second conference of the west regional pool of PANA which began in Lagos today.

He said that Nigeria's internal telecommunication network and that of the News Agency of Nigeria (NAN) had been re-informed, and that arrangements had been made for high frequency teleprinter broadcasts to member-states of the pool.

President Shagari said that already there was a provision of three-room office accommodation for the use of the PANA regional pool in Lagos.

He urged delegates to the conference to identify and agree on which member states in the pool were capable of constituting the nucleus of PANA west regional service and fix a firm date for the commencement of the service.

The president said: "Africa needs now, more than ever before, the facilities for the free flow of objective and patriotic news which only PANA can provide." He said that the imbalance in the flow of news between the developed and developing countries and the selfish manipulation and the domination of the situation by a few news agencies had not been corrected, and that "the situation is in fact becoming more serious."

President Shagari observed that Africa had remained a fertile group for neo-colonialist and racist manipulation because "we have lacked the tools to ensure the free flow of urbiased and unadulterated news within Africa and between Africa and the rest of the world."

The president's message was read on his behalf by the presidential adviser on information, Chief Olu Adebanjo.

The director-general of PANA, Sheikh Ousmane Diallo, told the delegates that the agency had already prepared a formal legal instrument titled "headquarters agreement between PANA and the general headquarters in Dakar, Senegal, and between it

and regional pool headquarters." He said that the agency had also prepared the relevant regulations governing personnel and conditions of service, staff regulation and salary.

The director-general said that 24 member-countries had laid their financial contributions and that it expected more than 1 million naira--between 1979 and 1981.

Sheikh Diallo told the delegates that PANA was planning to establish a school of journalism for the Portuguese speaking countries of member-states in cooperation with UNESCO because of the manpower needs of those countries and their desire to participate actively in the activities of the agency.

The regional conference, scheduled to begin yesterday, was postponed because of the death of Governor Shehu Kangiwa of Sokoto State. A proposal today by Guinea that Nigeria should be the chairman of the meeting, while the secretary should come from Gambia, was unanimously adopted. A specail message by the delegates condoled President Shagari on the death of the Sokoto State governor.

Present at today's meeting are delegates from Niger Republic, Guinea-Bissau, Guinea, Gambia, Senegal, Upper Volta, Togo and the host country, Nigeria.

CSO: 5500/5628

BRIEFS

HUAMBO TV STATION COMMISSIONED--Huambo, 19 Nov (ANGOP)--Another Angola People's Television (TPA) station, designed to cover the Huambo and Bie Provinces, began transmitting daily programs on 11 November, from its recently-installed studios in Huambo's capital of the same name. The TPA, the country's only television service, which until 11 November had studios only in Luanda and Benguela, has plans to expand its network countrywide by 1983. The Huambo provincial commissioner, Andre Pitra (Petroff), said when inaugurating the Huambo studios that in the People's Republic of Angola television was a means of the people's politico-ideological enlightenment and education. [Excerpts] [LD231158 Luanda ANGOP in Portuguese 0940 GMT 20 Nov 81]

INEFFICIENT CABLE SERVICE--Nowadays, it is increasingly difficult to send a telegram through the Posts, Telegraph and Telephone services: it normally takes 8 days for it to reach addressees. It supposedly is put to sleep in some drawer, or else, it travels on foot or by some other means. One is moved to ask, how is it that a telegram to Lubango or some other city takes so long to get there? And what happens when it is a cable going abroad? How many urgent matters are not given a solution in the face of the negligence and indifference of certain PTT workers, who prefer to spend 8 hours at work rather than work for 8 hours? What is behind all this? We believe that it is high time to begin demanding a sense of responsibility from these bureaucrats who, by their negative behavior, are obstructing the operation of the cable service to the detriment of the people, forgetting the slogan: "The most important thing is to solve the people's problems." We are convinced that no one sends a telegram or a letter for the simple pleasure of writing. A telegram or a letter are used as a way to urgently get in touch with people in far-away places or even to deal with business questions. However, these facts seem to be ignored by the PTT workers in charge of this important operation. Measures to prevent this situation from perpetuating itself should urgently be adopted. [Alves Antonio] [Excerpts] [Luanda JORNAL DE ANGOLA in Portuguese 11 Nov 81 p 2]

CSO: 5500/5631

RATIFICATION OF PANA CONVENTION EXPECTED

AB261830 Paris AFP in English 1652 GMT 26 Nov 81

[Text] Dar es Salaam, Nov. 26 (AFP)--Tanzania is expected soon to ratify the convention of the Pan-African News Agency (PANA) and make it possible for the agency to begin operations by next year.

An official of the government information department said here today that Tanzania has already paid its dues to PANA and that the next move will be to ratify the convention next week.

So far 12 African countries have ratified the PANA convention, but two more signatories are required to make the convention effective. The proposed African new agency was supposed to have been operational by now but has been hit by several problems, including the poor telecommunications network in the continent and lack of competent manpower to facilitate its operation.

The organizatio's director-general, Cheik Othuman Diallo, said on his departure for Khartoum that the establishment of the agency was one of the first resolutions by the Organization of African Unity (OAU) at its inception in 1963, but that it was not until 1976 that the idea was given an added impetus by the [words indistinct] meeting in Mauritius.

Mr Diallo said that he was optimistic that PANA would be a respectable news agency as one of its objectives, was to promote African unity and correct the distorted image portrayed by existing Western news organizations.

PANA, with its headquarters in Dakar, Senegal, will have five regional pools, in Lagos to serve west Africa, Kinshasa for central Africa, Lusaka for southern Africa, Khartoum for east Africa and Tripoli for north Africa.

Initially, PANA would be expected to operate in three languages--English, French and Arabic. Plans are also underway to open a school of journalism in Maputo, Mozambique, for Portuguese-speaking African journalists.

During his stop-over here, Mr Diallo had talks with heads of government-controlled mass media, government officials and director of Tanzania news agency Shihata Nkwabi Ngwanakilala.

CSO: 5500/2056

TELEPHONE FIRMS, POSTAL AGENCY AGREE ON DATA SYSTEM

Helsinki HELSINGIN SANOMAT in Finnish 30 Oct 81 p 11

[Text] The Postal and Telephone Agency signed on Thursday [29 October] agreements with individual telephone firms on the general data transfer system. These agreements augment the collective agreement signed in 1978.

However, the Postal and Telephone Agency had made a decision by Wednesday to terminate these new agreements at the end of 1983 when they expire. The matter of terminations was not dealt with at all at the time the agreements were signed.

Chief Director Pekka Tarjanne justified the terminations on Wednesday by pointing out that in 1978, "the necessary readiness did not exist for the making of an unequivocal agreement that would best have served the future developments." In order to avoid disturbances in service and to prevent a "tele war," the decision has been made at this early stage to terminate the agreements so that negotiations for a more appropriate agreement can begin, Tarjanne said.

General Manager Veikko Johansson from the Postal and Telephone Agency says that the purpose of the termination is to make one agreement, more comprehensive than the present one, which would be based on the experience gained from the one in effect now.

In spite of the acceleration of the tele war, the now-signed agreements specify that the information in the general data transfer system will be organized as public service. The individual telephone firms will supply their customers with the necessary terminals and cables within their own districts, and the Postal and Telephone Agency will be responsible for the remote transfer of data and for the central switchboard in Helsinki.

The network, which cost Fmk 50 million, will start operations at the beginning of November. It will only serve the needs of automatic information transfer.

9571
CSO: 5500/2032

FRENCH PARTICIPATION IN SATELLITE PROGRAMS

Paris AFP SCIENCES in French 8 Oct 81 p 15

[Text] Paris. French participation in three new satellites for Intelsat. Two French companies, Aerospatiale (SNIAS) and Thomson CSF, will participate in the construction of three supplementary satellites ordered by Intelsat, the International Organization of Telecommunications Satellites.

These satellites, SNIAS (National Industrial Aerospace Company) stated 1 October in Paris, are part of the Intelsat-V-A series which includes the largest commercial telecommunications satellites in the world. They are built by Ford Aerospace and Communications Corporation and an international team of suppliers, for a sum of about $75 million. SNIAS will be responsible for structures and for thermal regulation equipment, and Thomson will supply progressive wave tubes.

That will bring to 15 the number of satellites in the Intelsat-V and Intelsat-V-A series delivered or on order. The overall cost of the program is to exceed $1 billion.

Each of the Intelsat-V satellites, two of which have already been launched and are transmitting above the Atlantic, can send 12,000 simultaneous telephone calls and two color television programs.

The six Intelsat-V-A satellites that are to be launched beginning at the end of 1983, will be able to transmit up to 15,000 telephone calls, and television. The three supplementary satellites should make it possible to cope with the explosion in world demand in telecommunications, particularly in the dense traffic areas, before the Intelsat VI satellites, whose capacity will reach 40,000 telephone calls, are available in 1986.

Aerospatiale Entrusted with the Study of the Swedish Satellite Tele-X

Moreover, SNIAS has just been entrusted with the studies to outline the Swedish satellite Tele-X, it was announced the same day at the company's session, where it was stated that the contract was awarded by Saab-Scania Company, under the aegis of the Swedish Space Corporation (SSC).

Tele-X will be a satellite for the transmission of data, telecommunications and direct television for Sweden and eventually for other Scandinavian countries.

The form of the satellite will be modeled after that of the platform of the TDF-1 telecommunication satellites and the TV-SAT direct diffusion satellites; the platform was developed by Aerospatiale and its partners in Eurosatellite, the Franco-German industrial group.

In addition to the definition studies, Aerospatiale will supply technical support and assistance in the oversight of the project. It will also take part in determining a realization timetable including the integration and tests of the satellite, and will supply an estimated budget for the program.

9824
CSO: 5500/2029

STATE BROADCASTING COMPANY WORRIED OVER 'VIDEO REVOLUTION'

Reykjavik NEWS FROM ICELAND in English Nov 81 p 3

[Text] As most adult Icelanders are linguistic purists to different degrees, there is some worrying here that the loanword "video" has become entrenched in the language — alongside successful native coinages like *útvarp* (radio), *sjónvarp* (television) and *tölva* (computer). That is a trivial issue, however, compared with what is accurately referred to as *video-byltingin* — the video revolution, a phenomenon that is highly concrete and spreading fast in this country.

With the exception of domestic economic problems, no subject has come close to that revolution in terms of sustained media coverage during recent months. Naturally, the focus of the publicity is on the mushrooming growth of citizen cable-TV systems, and of businesses leasing out videocassettes and related supplies.

A few weeks ago, an official panel was set up — "to study the current use of videocassettes and associated tape machines in Iceland, and to make recommendations" leading to permanent regulation in that domain. But given the immense popularity of closed-circuit setups, any measures designed for real control over the situation are likely to be difficult to enforce, to put it mildly.

While there is no doubt that huge numbers of Icelanders eagerly want access to more varied video fare than what is offered by the single-channel TV of the State Broadcasting Service, the cable developments obviously have legal implications of two kinds. One has to do with the SBS monopoly, the other with existing copyright laws.

Ever since it was established in 1930, the SBS has functioned under a law granting it a monopoly on radio broadcasting, a charter that was amended to cover TV transmission in the mid-1960s. As for the royalties question, Iceland is a member of the Bern Union for the Protection of Literary and Artistic Works.

In contrast with SBS action to halt unauthorized airing of video materials, the institution has opted for a wait-and-see stance with regard to private cable systems. SBS spokesmen, however, imply that lawsuits may be brought once the government-appointed panel has released its evaluation.

Icelandic cinema operators are up in arms, for films they have contracted to rent from abroad show up here occasionally on videocassettes before the screening. But any litigation due to infringement on proprietary rights in such circumstances would have to be initiated by foreign parties. Rumours notwithstanding, moves to that end have failed to materialize so far.

Meanwhile, hardly a day passes without several media accounts of how the video revolution keeps gathering momentum. In the Westman Islands, an important S-Iceland fishing port, the prospect is that every TV viewer will soon have access to a ten-channel cable system. The islanders seem interested in setting up a powerful antenna for reception from a British relay satellite that will go into orbit next year.

Work to lay video cables throughout Breidholt, a populous residential section of Reykjavík, is in progress. In Akureyri on the north coast, 516 homeowners have organized to acquire a similar system for their neighbourhood. Parallel developments are under way or being planned in numerous small communities.

Few of the citizens who are involved give much thought to the legal aspects of the popular practice. The comment of a certain video enthusiast is a case in point: "I am no expert on that question. But I have discussed it with all sorts of people ... and their opinions on the matter are divided."

He added that no purpose would be served by trying to stop the spread of the welcome technology, let alone to ban what already exists. "If what is being done all around the country is found to be illegal," he said, "the law will simply have to be revised."

No reliable information is available on the number of playback machines currently in use here (one guess is 10,000 vs. 65,000 TVs). Spokesmen for

Videoson, a Reykjavík cassette rental that is a leader in the field nationwide, claim to circulate footage reaching 24-25,000 TV viewers — or roughly one-tenth of the country's population.

Reportedly, American movies of every genre — not so few of them comparatively recent productions — are dominant in Videoson's booming rental trade, but the immediate sources are said to be characteristically British. The company boasts that its 2,000-unit cassette bank in Europe's largest.

By many accounts, there is a notable customer preference for film materials described as light entertainment. If so, that taste is readily explainable in terms of the State Broadcasting Service's commitment to an educational role, and of its shoestring budget.

While a real showdown between the powers that be and the citizen-video camp may never materialize, newsmen have cited telling polarities in the general debate: "Those responsible for cable-TV systems could be sentenced to three-month prison terms, based on existing copyright laws." And: "At least twelve per cent of those with access to cable TV are qualified voters."

CSO: 5500/2057

NEW CULTURAL AFFAIRS MINISTER OUTLINES BROADCAST POLICY

Oslo AFTENPOSTEN in Norwegian 3 Nov 81 p 5

[Text] "We should experiment with cable TV and local radio before we finally determine broadcasting policies," Lars Roar Langslet told parliament yesterday. Langslet announced also a new parliamentary report on broadcasting policy and said a new commission will be established to evaluate TV advertising. The cabinet minister said that experimental work with cable TV and local radio can be carried out without conflicting with the current law on broadcasting. "It is encouraging to see all the initiative which has blossomed, particularly in local connections," Langslet pointed out.

Langslet stated that his department has a number of requests pending for permission to start local radio and cable TV. The cabinet minister pointed out that he is disposed to treat the requests expeditiously but emphasized that parliament should be consulted and that questions in regard to organizational forms and regulations should be straightened out before taking any steps involving establishing a new broadcasting policy. "We must take the time necessary for that," he emphasized.

"Meanwhile, I think that we have need for some experiments in regard to time limits and a certain leeway in variations in the methods of conducting such ventures, so we can gain experience and see clearer how it should be done. It is unknown terrain for all of us, and such experience will be of inestimable value when we reach the stage of making decisions.

"The current law permits, as is known, giving others besides the Norwegian Broadcasting System permission for 'limited broadcasting activity' in 'special situations'," Lnaslet stated. No one in the discussion period after his statement opposed such a procedure. On the other hand, the chairman of the parliamentary committee on education and ecclesiastical affairs, Reiulf Steen, said he hoped that the government would not take steps which would restrict later decisions and make the situation inflexible when it would be a question of establishing a new broadcasting policy. Cabinet Minister Langslet assured Steen that such a thing would not happen.

Langslet stated that the government wants to make an announcement to parliament in regard to broadcasting policy. He also said a commission will be created to evaluate advertising on TV against the background of foreign advertising becoming an everyday thing.

The minister for environmental affairs, Wenche Frogn Sellaeg, stated last night that there will shortly be established a committee which will carry out the investigative work in regard to a new planning law such as the Conservatives, the Christian People's Party and the Center Party have previously favored. She emphasized also that the government desires that more people be given permission to build their own vacation cottages. In this connection, she stated that the minister of agriculture has asked the Directorate for State Forests to investigate the possibilities of selling unproductive state-owned land to interested cottage-builders.

The cabinet minister also was able to state that a coordinated plan for waterways which have not yet been subject to concessions or safeguarded is being worked up on the department for environmental affairs.

6893
CSO: 5500/2037

POLLS SHOW MOST SUPPORT NORDSAT PROJECT

Oslo AFTENPOSTEN in Norwegian 31 Oct 81 p 3

[Text] Fifty-one percent, according to the week's Gallup poll of Norwegian Market Data, favor the creation of a new radio-TV corporation to compete with the Norwegian Broadcasting System (NRK). Only 19 percent are opposed. But people are even more positive concerning cooperation in a Nordic TV satellite. A clear majority prefers that to a second TV channel or to a new company.

Just one-third favored the formation of a new Norwegian TV company in a similar poll 2 years ago. About one-quarter were opposed.

The poll of the Norwegian Market Data was made during the last half of August this year through personal interviews with 1500 men and women over 15 years of age from all over the country.

Question 1. "During the election campaign, it was suggested that the monopoly of the Norwegian Broadcasting System in radio and TV programs should perhaps be changed by creating a competing state or private radio-TV company. Are you for or against the proposal, or are you uncertain?"

	All Asked %	Men %	Women %	Under 30 %	30-59 %	60 and Over %
For	51	60	43	61	52	39
Against	19	18	19	16	17	24
Uncertain	30	22	38	23	31	37
Total Percent	100	100	100	100	100	100

The question was posed in the same way during a poll in September 1979, thus about the same time of the municipal and provincial assembly election. At that time, 35 percent were for a new radio-TV company, 25 percent against, and 40 percent uncertain. Both polls show that a definitely larger majority among Conservative voters favors a competing radio-TV company than among people in other parties.

Question 2. "One can also consider, in the debate concerning an expansion of TV transmissions, Nordic cooperation regarding a TV satellite which eventually could transmit all TV transmission in the Nordic area to all countries."

"If the technical, legal and economic problems can be solved, are you then overwhelmingly positive or overwhelmingly negative to a Nordic TV satellite?"

	All Asked %	Men %	Women %	Under 30 %	30-59 %	60 and Over %
Positive	66	73	59	74	68	52
Negative	16	15	16	12	15	21
Don't Know	18	12	25	14	17	27
Total Percent	100	100	100	100	100	100

Two-thirds of those questioned were positive in regard to a Nordic satellite. In a similar poll in May 1979, it was somewhat less, 59 percent were positive, 19 percent were negative, while 22 were uncertain.

It is to be noted from the tables above that the majority both for a new company and for Nordic TV satellite is considerably greater among men than women, and greater among young people than older persons. The same result occurred in the earlier polls.

This means that interest in an expanding offering by TV generally is greatest among men and among young people.

Question 3. "There are three solutions for obtaining more extensive TV offerings in Norway; namely, a second TV channel in the Norwegian Broadcasting System, a new state or private TV company in addition to NRK, and construction of a Nordic TV satellite. Which of these three solutions do you most prefer?"

	All Asked %	Men %	Women %	Under 30 %	30-59 %	60 and Over %
A Second NRK Channel	17	17	16	17	17	16
A New TV Corp.	18	20	15	22	17	14
Nordic TV Satellite	43	47	39	46	46	32
Don't Know	22	16	30	15	20	38
Total Percent	100	100	100	100	100	100

6893
CSO: 5500/2037

END

JPRS 79683

17 December 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 193

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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17 December 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 193

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EXPANSION OF POSTS AND TELECOMMUNICATIONS NETWORK OVER PAST 5 YEARS

Hanoi NHAN DAN in Vietnamese 20 Oct 81 p 2

[Article by Nguyen Doan, Posts and Telecommunication General Department: "Posts and Telecommunications Network Expands"]

[Excerpts] Over the past 5 years (1976-1980) the long-distance and provincial telecommunications network has increased by 5,904 km of pole line with 37,950 km of wire pairs of various kinds, 740 km of narrow-band relay radio wire; 215 districts have been equipped with carrier terminals thus injuring communications from the central echelon to provinces, municipalities and special zones by wire, short-wave radio transmission and radio relay, including wired linkage from 34 provinces and municipalities to the central echelon. Over the past 5 years the district, city and town networks have been increased by 500 telephone exchanges of various kinds and 27,000 individual [telephone] sets. At present, there are nationwide 3,968 telephone exchanges and 90,254 telephone sets, including 291 automatic exchanges with 44,620 telephone sets. An automatic telephone network covers 28 provinces and cities, while 1,200 villages and cooperatives now have telephones. To achieve the goal of unifying the communications network nationwide, since 1977 the sector has concentrated capital, supplies and labor on building the 2,080 km-long open wire Hanoi-Ho Chi Minh-City-Minh Hai line. The first part of the project has now been completed and put into gradual use so as to promote efficiency of invested capital. Many southern provinces and districts have used this line to communicate directly with the central echelon via the wired system.

Within the framework of a gradual network modernization program, for the first time the posts and telecommunication sector has built and put into commission a 110 km-long distance communication copper coaxial line connecting Hanoi, Hai Duong and Haiphong, capable of transmitting 3,596 khz or 360 conversions. Along with building the coaxial cable, the posts and telecommunication sector has assembled and installed telephone carrier terminals for use with the cable, capable of accommodating 360 phone channels on the longest communication distance of 2,500 km as well as demodulation anywhere along the line with the use of special equipment. The completion and putting into use of the ground station of the Lotus communication satellite has changed the quality of communications between our country and other nations in the world, opening up many new capabilities to international communications. Because the communications network is well-focused and has strengthened, improved and developed in the right

direction, over the past 5 years although the labor force of the entire sector has increased by 11 percent, labor productivity has increased by 119.7 percent, and the sector's capacity to serve has increased noticeably. In comparison with 1976, the volume of postal matters and packages in 1980 has increased by 42.1 percent, telegraph has increased by 90 percent, long-distance telephone has increased by 98.4 percent, satisfying many communication and liaison requirements of society and individuals. Owing to increased capacity of serving, the aggregate income of the sector has increased by 144 percent. For 5 consecutive years, the sector has overfulfilled state plans.

To carry out more properly the current task, the postal and communications network still has to overcome many shortcomings and weak points, striving to raise the capacity of serving, ensuring quality, stabilizing the network and maximize the use of communications equipment.

9213
CSO: 5500/4511

POST-TELEGRAPH SECTOR PREPARES FOR PARTY CONGRESS

Hanoi QUAN DOI NHAN DAN in Vietnamese 30 Oct 81 p 1

[Text] VNA--The main information centers of the post and telegraph sector have launched a collective emulation movement to urgently complete many liaison works and to strengthen the post and telegraph service and domestic publications distribution network in order to serve the party congress and the people.

The post and telegraph centers in the cities of Hanoi, Ho Chi Minh, Haiphong and Da Nang have set forth specific measures aimed at ensuring the safe, exact and timely reception, conveyance and distribution of official documents and other materials for the benefit of the party congress. The various installations are trying to quickly complete works connected with 800-number automatic telephone devices, and with the Noi Bai-Hanoi microwave signal line, to open two short-wave wireless telephonic channels between Hanoi and Ho Chi Minh City and to install and operate an information network between Ho Chi Minh City and Moscow--all that with the objective of maintaining thorough telephonic and telegraphic liaison between the principal information centers.

At the central level, the publications distribution center and the letters and newspapers dispatch center are improving their working method, rearranging working shifts, increasing the number of operational vehicles and trying to avoid mistakes and losses and to finish the task of packing and distributing daily newspapers an hour ahead of schedule, weeklies 6 hours after their receipt and magazines within the day of their receipt in order to bring them into the people's hands as soon as possible.

The sector is also trying to avoid the loss and stagnation of mail items and letters of the people, especially the letters and applications addressed by them to party organs. On this occasion, the telegraphic, telephonic, and postal centers have also launched an activity campaign aimed at enchancing the spirit of wholehearted and courteous service to customers.

9332
CSO: 5500/4517

SATELLITE COMMUNICATIONS DISCUSSED AT SEMINAR

Santiago EL MERCURIO in Spanish 5 Nov 81 p C7

[Text] A complete report on the state of telecommunications in Chile was given by Lt Col Gerson Echeverria, undersecretary of the ministry, at the seminar on the topic organized by the National Telecommunications Enterprise, ENTEL-Chile, at the FISA [Santiago Industrial Fair] Center of Congresses.

Also participating in the event, which is one of the activities scheduled by ENTEL in its Cerrillos Park presentation, was the general manager of the communications organization, Col Jaime Machuca, the chairman of the ENTEL directorate, Maj Gen Luis Joaquin Ramirez, and the manager of international relations of the satellite communications system, INTELSAT, Jose Luis Alegret, of Venezuelan nationality, who came to Chile for the specific purpose of attending the seminar.

Among those present were engineers and technicians from public and private enterprises involved in communications.

Pioneer

The undersecretary of telecommunications said in his report that the sector is in a phase of development and growth of great importance. He reminded those present that Chile was the first country in South America to join the satellite communications system.

"Our country was also the pioneer in domestic use of the system, with the installation of telephone communications between Punta Arenas and Santiago."

He reported that it will soon be possible to have the same process in telephone communications between Santiago and Coihaique, in the 11th region. Echeverria then emphasized the work done by the Office of Undersecretary in coordinating and supervising telecommunications.

When asked about the new law that will regulate this activity, Echeverria said that it was hoped that it would be promulgated in December and that it is now being approved by Legislative Committee 4.

"This is a broad and flexible legal code," he said, "that will provide real substance for and promote the development of telecommunications, in keeping with the growth of our economy."

He explained that the law on telecommunications will replace the old regulation on electrical services, but that its promulgation will not alter already existing provisions.

Possibilities

For his part, the manager of international relations of INTELSAT, Jose Luis Alegret, emphasized in his report the interest now aroused by utilization of the satellite for communications by various countries.

He then pointed out guarantees offered by the system, mainly for internal communications and the transmission of data in countries where the topography presents insurmountable obstacles.

Alegret finally spoke of the wide range of possibilities offered by satellite communications, possibilities that have not yet been used.

11,464
CSO: 5500/2046

SANDINIST-MARXIST RADIO BROADCASTS OVERPOWER LOCAL STATIONS

San Jose LA NACION in Spanish 28 Oct 81 p 6Z

[Article by correspondent Edgar Vega]

[Text] La Cruz, Guanacaste--Nicaraguan radio stations are heard more than 50 kilometers into Costa Rica and cover the entire border area, residents there have stated.

It was reported that Nicaraguan radio broadcasts reach from Conventillos on the Pacific coast to Barra del Colorado.

The residents explained that Radio Sandino and Radio Frente Sur, located in San Carlos, as well as television channels 2 and 6, are bombarding Costa Ricans in the border region with Marxist-Leninist slogans.

"They are simply unbearable," they asserted.

They also said that they have great difficulty tuning in the domestic electronic media in the area. Only Radio Monumental, Radio Columbia and channel 13 are readily received.

"Whether they like it or not, the residents of northern Costa Rica are forced to listen to Sandinist radio and watch Sandinist television, because of how strongly they come in, and thus little by little Costa Ricans are being brainwashed by communist policy as transmitted by the Sandinist Government," they stated.

They also explained that being exposed to Marxist ideology is more detrimental to young people and children than to adults.

In addition, they mentioned that some 8 months ago, Planning Minister Wilburg Jimenez met with members of the La Cruz City Government to discuss the problem.

On that occasion they came to the conclusion that El Hacha Hill, in the foothills of the Orosi volcano, is the best site for a powerful relay station for Costa Rican radio and television.

Since then, nothing has been heard about the matter, although channel 13 recently ordered efforts made to counteract the Nicaraguan media penetration, it was reported.

In conclusion, the residents of the region stated that now that the leaders of Nicaragua's government have announced their political and ideological line, which is openly Marxist-Leninist, the Costa Rican Government and the democratic forces must combat this invasion.

8743
CSO: 5500/2050

CHAHBAHAR MICROWAVE SYSTEM TO BE REPLACED

Tehran KAYHAN INTERNATIONAL in English 12 Nov 81 p 3

[Text]

TELECOMMUNICATION
COMPANY OF IRAN

TEHRAN
Dr. Ali Shariati Ave., Bisim Building No. 5
Tender Notice No. 60/52

The Telecommunication Company of Iran (TCI) located at Dr. Ali Shariati Ave., Bldg. No. 5 invites Tenderers to take part in Replacing the existing 1→1 Microwave system of Padagi-Chahbahar route by a new two-way 1260 FDM channel 2→1 system consisting of one TP, one TV and one protection channel herein after called "High Density Route" and also to replace the existing UHF and VHF system of Iranshahr and Saravan by new 300 FDM channel 1→1 Microwave radio systems in the new routes (Herein after called "Low Density routes").

The Contractor shall supply all the equipment on basis of C&F delivery to Tehran in accordance with attached Technical Specifications, Draft Contract and tender conditions.

Prospective applicants should pay Rls. 10,000 (documents fee) to the account No. 90018 of Bank Meili Iran Mokhaberat Branch, and receive the tender documents which consist of tender conditions Draft contract, and Technical Specifications, sign them and attach them to their offer in 3 sealed envelopes marked A,B,C and hand it to the General Secretariate Department of Purchasing and Contract of T.C.I. second floor room 209 at the said address against a receipt.

Applicants residing abroad are exempt from paying Rls. 10,000/- fee in the case of having no agency in Iran. The tender documents will be mailed to the address of such applicants.

Tenders received not later than the end of office hours on Monday, Jan. 18, 1982 (28.10.1360) will be opened by the tender committee at 10.00 O'clock on Jan 19, 1982 (29.10.1360) in room No. 208, at above address.

Tenderers or their authorized representatives holding a letter of introduction, may attend the tender committee.

Telecommunication Company of Iran is entitled to reject any or all the bids received./H

Purchasing and Contracts Division
of TCI

Cables: Irtelco
Intertel Tehran

Telex: 2799 TCI TN MA-22172

CSO: 5500/5306

BRIEFS

BAGH-E MALEK BOOSTER READY--Last night the 10-kilowatt television transmitter of Bagh-e Malek went into operation. It will telecast the programs of network number one of the Vision of Iran on Channel 6 and will be seen by Bagh-e Malek and the surrounding areas. [GF301711 Ahvaz Domestic Service in Persian 1330 GMT 30 Nov 81 GF]

CSO: 5500/5311

BRIEFS

COMPLETION OF COMMUNICATIONS PROJECTS--The Public Post, Telegraph and Telephone Organization completed a number of important projects in the first 6 months of the current year. A source in the ministry [of communications] has said that these projects include the telex, telegraph and electronic teleprinter equipment and their attachments, the national microwave [project] equipment, reorganization [presumably meaning updating] of the equipment in al-Salihiyah studio and linking Iraq with Kuwait by microwave. A total of 17 automatic telephone exchanges were also installed in various parts of the country, the international communication exchange has been expanded to maximum capacity and the ground station has been expanded and new channels added to it. A new carrier has been added to the Indian Ocean antenna of the ground station. Telex equipment has also been added to this station. Al-Hillah site and the electronic computer project for mechanization [computerization] of the telephone lists [directories] have also been brought under control. At the same level, the Pivotal Cables Authority completed a number of important projects in the same period, including the provision and installation of the equipment and the cables for the southern pivotal cable project and extension of the pivotal cable to the Upper Euphrates. A communications complex was built in (Greater Tun) and another in Dahuk. A grounding [tanzil] station was built in Irbil, communication complexes were built in Aski Kalak and Bartila and telephone exchanges were built in al-Rashidiyah and al-Fallujah. [Text] [Baghdad AL-THAWRAH in Arabic 7 Sep 81 p 6] 8494

CSO: 5500/4703

ISSUES, PROBLEMS CONFRONTING COMMUNICATIONS MINISTRY DISCUSSED

Kuwait AL-TALI'AH in Arabic No 711, 23 Sep 81 pp 16-17

[Article: "Ministry of Communications Between Development Tendencies and Current Stumbling Blocks"]

[Text] In the past few days, the interviews and statements by officials of the Ministry of Communications have raised a number of important issues pertaining to the development of this ministry's services. While the officials were talking about their future plans, the citizens have been voicing their complaints over the deteriorating services of the Ministry of Communications, especially complaints over the problems connected with the telephone service.

One of the most significant interviews given last week was the interview by 'Isa al-Mazyidi, the minister of communications. In his interview with AL-WATAN on 9 September, the minister dealt with a number of significant issues about which we think it is important to discuss in this article.

In his reply to a question on the importance of the explanation form issued by the ministry, the minister said: "These forms have been issued due to the delay in the delivery of some bills to subscribers enjoying the telephone service."

It is also evident that the goal of these forms is to enable the ministry to collect the overdue fees and subscriptions owed by the citizens. Though we understand the importance of this step and the importance of having the citizens pay the dues in return for the telephone service, we still believe that there is another problem which has been discussed by the press. The citizens' letters and complaints are connected with the fact that the ministry has overbilled some citizens who have not actually used the service to the degree meriting the payment of such sums. Moreover, the failure to examine the bills have caused some citizens to shoulder the dues owed by others.

Though we agree with the minister over the ministry's eagerness to collect its dues from the citizens, the citizens also deserve to have their rights respected by the ministry and deserve not to be saddled with burdens beyond their capability. The special forms should seek to realize this goal.

On another question concerning the jumbled and dead lines and the frequent complaints over this issue, the minister said: "This is due to the age of some

lines and to the exposure of others to weather conditions, such as rain and other elements. It is also largely due to civilian works, such as excavation and other works."

The truth is that some of the reasons that the minister has mentioned are objective while others fail to provide an adequate answer. The minister talks, for example, of coordination among the various service utilities controlled by state agencies. Such coordination presumes, at least, cancellation of the major reason given by the minister, namely excavation and other works carried out by the state's various agencies. It is either that there is not coordination or this is not the major cause.

The most important point in the minister's interview is connected with the problem of external calls. In his reply to a question on this issue, the minister confirms the presence of a problem in this section but defines causes that do not agree with the causes previously underlined by Engineer Ibrahim al-'Askar, the director of the Telegraph and Telephone Department.

Al'Askar had defined the essence of the problem in the shortage of workers in this section. In a statement to AL-WATAN on 6 September, al-'Askar said that there are in the section 120 switchboards that are supposed to be manned by 480 workers alternately whereas the section only has 350 workers. Engineer al'Askar also said that he has asked the ministry's agencies concerned to appoint 100 additional employees to improve the service in this vital section.

But the minister ignores the problem in his interview and cites a number of reasons beyond the control of the officials and connected with the cooperation of other countries. When mentioning matters concerning the section, the minister asserts that the section is in good condition, saying: "After the surprise visits I have made to the section, sometimes in the late hours of the night or the early hours of the morning. I have found those working in the international communications performing their duty with dedication and sincerity, especially since they have felt the strong interest of the ministry's officials."

There is no doubt that this section's workers perform their work well. But can they perform their duties in the best manner possible under the shortage which the section is experiencing and which has been underlined by the department's director?

Moreover, the minister said in the interview: "Due to the increasing number of those wishing to call various parts of the world, there is increased pressure on the lines and this makes one feel that they are busy all the time."

Here the minister circumvents the real problem pointed out by Engineer al-'Askar by saying that the lines are constantly busy.

Where is the truth here: Is it the shortage of workers or the shortage of lines? We don't know. But at least there must be accord and agreement among the ministry officials in defining the real reason so that we may at least have the hope that the problems experienced by this vital service in the country will be eliminated.

The minister also points out in his interview that the ministry "has invited new bids for the construction of a network or an exchange with a capacity of 25,000 lines, which can be later expanded to 100,000 lines, for car telephones or portable telephones."

Before the minister's interview, there was a statement by a ministry official about a plan to provide television service by telephone. We would like to ask a question that has caused astonishment among the citizens: Has the ministry solved the dilemmas of the telephone service and eliminated its problems in order to begin thinking of luxury services? The citizens are waiting for current to be injected into their dead lines, for the jumbled lines to be unravelled and for the telephone service to be provided to new areas and to some old areas. We must point out that al-Sha'biyat area lacks even a single telephone line. Shouldn't the attention be focused on these vital aspects before thought is given to inviting bids for projects for car telephones and cable (television service).

Finally, answering AL-WATAN's question on whether the ministry has a plan to convey telephone service to new areas, the minister says: "Naturally, the ministry proceeds according to a timetable to provide the various services, especially telephone service, to new residential areas or to areas that will be developed in the future." But the minister makes the plan so general that you almost feel that it is nonexistent. Answering a question requesting that he define the first area that will enjoy such services, the minister says: "The truth is that there is no specific area. But programs have been formulated for the various areas of Kuwait according to priority and according to the construction projects which will be carried out in them."

This answer raises a number of questions: Why is it difficult to determine the area? Where does this difficulty come from if there is a timetable and why has the minister's answer in this regard been vague?

Moreover, the minister's statements regarding overcrowding in the Kuwaiti ports is also debatable. The minister denies that there is overcrowding in the ports, saying: "On the contrary, Kuwait port is one of the international ports lauded by the various countries exporting goods to this area. We experience no pile-ups in the Kuwaiti ports and their work is proceeding very smoothly."

We would like to remind the minister that a short while ago the crisis of Kuwait port was discussed on the pages of one of the other newspapers. As far as we remember, a committee was formed at the time to discuss this issue.

In conclusion, we would like to emphasize that defining the problem and not trying to conceal it are fundamental factors in finding the proper solution for it. Therefore, the ambiguity engulfing some points in the minister's interview needs to be dispersed and clarified so that rumors and hearsay may not be the basis for discussing problems and defining their causes. Telling the citizens the facts, revealing matters to them and asking them to participate in and to contribute to finding solutions to the problems affecting them constituted a basic step in creating the foundations of development and construction. What really concerns the citizens are solutions to their daily problems and not talk about the introduction of luxury services which very few people need.

8494
CSO: 5500/4703

BRIEFS

'PANA' CONVENTION RATIFIED--Addis Ababa, 26 Nov (AFP)--Burundi today became the 25th Organisation of African Unity (OAU) member state to sign the convention establishing the PAN AFRICAN NEWS AGENCY (PANA). Burundi Ambassador Artemon Simbananiye signed the document in the presence of visiting PANA Director-General Ousmane Diallo, whose headquarters is based in Dakar, Senegal. Mr Simbananiye affirmed his country's active support for Africa's efforts to promote a new world information order, while Mr Diallo said the OAU body would be a weapon in Africa's bid to achieve unity and genuine independence. One-third of the 50 OAU member-states must sign the convention for it to go into force. Although 15 have signed so far, a total of 24 member states have paid their financial contributions to PANA, expected to go into operation next year. [Text] [AB262124 Paris AFP in English 1737 GMT 26 Nov 81]

CSO: 5500/5635

BRIEFS

JAPANESE TELECOMMUNICATIONS ASSISTANCE--The Japanese Government is to grant Ghana a loan of (5.9 billion yen) about £72 million for the expansion and modernization of the country's telecommunication system. This will bring to over six billion yen the total loan so far granted to the Government of Ghana by the Government of Japan this month. According to a Ghana News Agency report, the Japanese Ambassador in Ghana, Mr Masatada Higaki, disclosed this yesterday when he paid a courtesy call on the Minister of Finance and Economic Planning, Professor George Benneh. The report said Prof. Benneh expressed the Ghana Government's appreciation to the Japanese Parliamentary Vice Minister for Foreign Affairs for securing the loan for Ghana. Prof Benneh stated that the loan would enable Ghana to link her telecommunication system with other member countries of the Economic Community of West African States (ECOWAS). The loan which carries an interest rate of 3.5% is payable in 30 years with a ten-year grace period. Last Friday, the Japanese Government gave Ghana 400 million yen for the purchase of fertilizer, chemicals, machinery and services to boost the country's agriculture. Three hundred million yen out of the total amount will be utilized for agricultural development projects in Upper and Volta Regions. The remaining 100 million yen will go to the Okyereko Irrigation Project in the Central Region. [Text] [Accra DAILY GRAPHIC in English 13 Nov 81 p 8]

CSO: 5500/5638

BRIEFS

COMMERCIAL TELEVISION CENTRALIZATION--The Presidential Adviser on Information, Chief Olu Adebanjo, has announced that commercial services of the Nigerian Television Authority (NTA) would henceforth be centralised. Chief Adebanjo made the announcement while launching the first Nigerian Television National Audience Research and Marketing Audit in Lagos. He said the centralisation of NTA's commercial functions had become necessary because of the need to overcome the usual problem of communication which had already made it difficult for customers to reach the distant stations of NTA. Under the new plan, Chief Adebanjo said the country has been divided into six areas with a number of area controllers and area representatives to satisfy the needs of the customers. [Text] [London WEST AFRICA in English No 3345, 7 Sep 81 pp 2073-2074]

'RADIO NIGERIA,' IKEJA, ESTABLISHED--The presidential adviser on information, Chief Olu Adebanjo, has said that the establishment of Radio Nigeria, Ikeja, is aimed at correcting the falsehoods being broadcast by Radio Lagos. He told newsmen at Murtala Muhammad Airport yesterday that the Lagos State Government had never cooperated with the federal government but was only spreading malicious rumors against it. This, he noted, did not make for democracy nor did it auger well for the people. Chief Adebanjo stated that the present administration had never censored any government-owned media organization as being rumored in some quarters. He condemned the journalists who allow themselves to be used as tools by some unscrupulous politicians to achieve their selfish goals. The presidential adviser was on his way to Port Harcourt to begin an official visit to the Rivers and Cross River States. [Text] [AB260900 Lagos Domestic Service in English 0600 GMT 26 Nov 81]

CSO: 5500/5637

JOHANNESBURG FIRM MANUFACTURES THICK-FILM HYBRID

Johannesburg THE STAR in English 16 Nov 81 p 26

[Text]

MSN Products, a member of the quoted Altech Group, announces development of a new miniaturised hybrid thick film circuit-manufacturing technique.

MSN, manufacturer of hybrid thick film microelectronics, has spent several months in the development of the new method. It embodies techniques of multi-layering solder-type circuitry with latest micro-packaged component devices.

Peter Wilson, managing director of MSN, said: "Production quantities have already been manufactured within MSN's Johannesburg facility and delivered to a sophisticated electronics systems producer. This module comprises a 5 x layer multilayer thick-film hybrid using micro-packaged devices, and has allowed an area reduction of up to 7:1 over other techniques. The micro-packaged integrated circuits also allow for minimum path lengths, thereby increasing high-frequency performances."

Mr Wilson said that perviously used hybrid multilayer manufacturing methods, utilising gold tracking and wire-bonding techniques, have always proved highly expensive. "However, this new solder-techniqued method is most cost effective, selling at considerably reduced prices.

Hybrids basic design affords the ability to remove individual components without destroying the mounting and interconnection mechanism that in itself has high reliability, having been produced under process temperatures up to 900 degrees C."

Mr Wilson said that this new multilayering technique brought all the advantages, previously found only in expensive "chip and wire" techniques, into commercially viable reach.

CSO: 5500/5634

FIRM ACHIEVES BREAKTHROUGH ON DIGITAL PABX'S

Johannesburg SUNDAY TIMES-BUSINESS TIMES in English 15 Nov 81 p 34

[Text]

PLESSEY, the Cape-based electronics and telecommunications group, has begun manufacture of its first digital PABXs.

Development of this R1,5-million project coincides with the Post Office's recent installation of its first digital electronic telephone exchanges.

By offering PABX users complementary advanced digital electronic technology, Plessey will enable the new equipment's full potential range of services and facilities to be realised.

A unique aspect of Plessey's system, the K2 PEDX, is that it is South African-designed.

Rather than modify existing overseas designs to meet the South African Post Office specifications — the route chosen by other suppliers — it was decided to participate in a new design from inception.

A team of four highly qualified South African engineers were seconded to Plessey Canada once the new digital PABX design project was initiated.

These engineers then designed and built a South African prototype model incorporating South African specifications for lighting, humidity, high temperatures and telephone network characteristics.

This approach has paid off tarough the skills the team acquired and contributed to the project and the subsequent speedy acceptance, subject to satisfactory field trials, of the system by the Post Office.

The systems in manufacture now will be placed on field trials during which they will be subjected to the normal operating conditions which all PABXs experience.

Once these are completed, deliveries to customers are scheduled to commence in the second quarter of 1982. Initial orders have already been taken by Plessey's communication systems division.

The range of services and facilities of the K2 PEDX includes a memory to store numbers allowing abbreviated and automatic dialling, a "follow me" function for rerouting calls to different offices when the recipient leaves his office, conference facilities and various levels of trunk barring.

The system is also fully extensible from 1 to 2 000 extensions, allowing businesses to expand their telephone systems without physically changing to larger units.

An important consideration with rising office rents is that the system is also a space saver — a 320-extension system occupying only 0,5 sq m of floor area.

CSO: 5500/5634

BRITISH COMPUTER GROUP WILL START UP IN COUNTRY

Johannesburg SUNDAY TIMES-BUSINESS TIMES in English 15 Nov 81 p 3

[Article by John Spira: "UK Computer Group for SA"]

[Text]

CMC, Britain's largest manufacturer and distributor of computer data capture equipment, is to establish a permanent presence in South Africa.

The move is part of the £22-million-a-year group's drive drive into world markets.

CMC has underlined its commitment to the South African market by making a large (unspecified) investment in stocks, parts and people taken over from the company which has to date been distributing CMC equipment in this country.

Jeremy Causley, managing director of CMC UK, tells Business Times that his group's decision to establish a full subsidiary in South Africa was taken with the full confidence that CMC equipment will make major inroads into a buoyant market operating in a thriving economy.

He adds that at present CMC sales in South Africa are in the region of R1,8-million.

The target is to double this figure by early 1983 via CMC's range of data capture kit and its relatively new Sovereign machine, which combines facilities which include data entry, batch processing, communications, and non-stop processing.

"In fact," says Mr Causley, "the Sovereign's flexibility and power have on several occasions prompted users to replace their IBM and ICL mainframes with Sovereign."

He points out that CMC, having in the past sold its equipment through a distributor in South Africa, already has an existing base here (it has 38 systems already installed in South Africa).

"We shall build on this base and invest whatever additional funds are required to obtain a market share in South Africa similar to the share we have in the UK."

CMC's UK share of the data entry equipment market is 35%, against 5% in South Africa.

Martin Jones, managing director of the new subsidiary, comments: "Our existing customers in South Africa will clearly benefit from an increased level of service and support enabled by direct contact with the manufacturer."

At present, CMC exports 20% of its turnover. But in line with its expansion drive, it hopes to raise this figure to 50% during the next two years. It currently sells in 31 countries.

Not that this means CMC has been unsuccessful in the UK. According to Mr Causley, CMC sales in Britain have been growing at 35% a year in spite of the prevailing economic recession.

Worldwide sales are budgeted to reach £100-million by the mid-1980s.

CMC forms part of a giant US conglomerate, which recorded a turnover of £3 500-million last ye[illegible]

CSO: 5500/5634

NEW SISWATI RADIO SERVICE PLANNED

Mbabane THE TIMES OF SWAZILAND in English 19 Nov 81 p 1

[Article by James Dlamini]

[Text] Swaziland may soon have a new commercial Siswati radio service.

Swazi Music Radio, which broadcasts from Swaziland into South Africa in English, Portuguese and various Indian languages, is planning to expand into the local market.

The station, which started in 1972, operates from Sandlane near the border with South Africa.

It is understood the company, which faces fairly stiff competition from other radio stations in South Africa, feels there is a gap they can fill in the local market.

Kirsh Holdings, who own the station, are presently trying to get the government "green light" for the new service.

Company director, Mr. Issi Kirsh, said he could not say how much money would be spent on the project until discussions and engineering statistics had been submitted.

"But I can tell you, development projects like this are not cheap," he said. "I cannot comment any further until discussions with the government have been finalised."

Mr. Kirsh is the brother of tycoon, Natie Kirsh, who has a number of businesses in Swaziland and is chairman of Kirsh Holdings.

A top government official disclosed that Kirsh have approached Swaziland Broadcasting and Information Department with proposals.

"They have approached us because they need our permission to go ahead with a project like this," the official said. "They are trying to improve their FM coverage to reach Swazi audiences. They also want to improve their medium wave to broadcast into Kwa-Zulu from Swaziland," the official said.

Meanwhile, a new radio station aimed at South African Swazis in the ka-Ngwane homeland is being planned. The ka-Ngwane Radio will broadcast from the town of Nelspruit. There will be 12-hour broadcasts.

Swaziland Broadcasting Service recently introduced a new and improved network which reaches about 90 per cent of the country.

CSO: 5500/5639

USSR

PROGRESS AND PLANS FOR COMMUNICATIONS SERVICES DEVELOPMENT REVIEWED

Moscow EKONOMICHESKAYA GAZETA in Russian No 37, Sep 81 p 2

[Article: "Communications Development. Review"]

[Text] The utmost development of communications is one of the prerequisites for the further strengthening of our economy and the steadfast rise in the material and cultural standard of living of the Soviet People. Considerable progress was made in the past five-year plan in improving communications facilities. A half-billion more rubles were invested in the sector than was called for in the plan for 1976-1980. Fixed production capital grew by 43 percent. Communications workers carried out the assignments of the 10th Five-Year Plan ahead of schedule. Their labor received a high rating in the welcoming speech of comrade L.I. Brezhnev.

Long distance telephone lines, the basis for the nation's electrical communications system, expanded at a fast pace over the past period. The length of channels using modern cable, radio relay and satellite links increased by a factor of 1.9. The network of automated long distance telephone exchanges doubled. Now the residents of 137 cities enjoy direct long distance dialing. More than 70 percent of the regional centers have automated service to the oblast centers.

The five-year plan to increase telephones in the cities and rural areas has been overfulfilled. In all, about six million subscribers have been added. The farm telephone service at 16,000 kolkhozes and sovkhozes was expanded and rebuilt at the same time. The task of doubling the number of facsimile receiver stations for newspaper type pages in the 10th Five-Year Plan was fulfilled a year ahead of schedule. Now, the type pages for 13 central newspapers are transmitted from Moscow via communications channels to 41 stations in the nation. The capacity of channel switching centers for the statewide data transmission system and telegraph network increased by a factor 1.7.

The assignment in the five-year plan to place television stations in service was significantly overfulfilled. As a result, television broadcasting now covers the territory of the USSR where 86 percent of the populace lives. All of the existing network allows the transmission of color television programs. The material and technical base for postal service has been strengthened. Labor productivity of communications workers has improved by 26 percent over the five years.

Based on Advanced Equipment

Ahead in the 11th Five-Year Plan, in accordance with the resolutions of the 26th CPSU Congress is the more complete satisfaction of the needs of the national economy and the populace for communications services.

Considerable capital investments are being routed to the further development and improvement of long distance service. The length of long distance telephone channels will increase by a factor of about 1.8 times. The fast pace of television development as well as the municipal and rural telephone networks is being maintained.

The acceleration of scientific and technical progress throughout the entire extensive sector economy is a decisive factor in the continuing formation of the nation's unified automated communications network (YeASS). The primary issue is the automation of the networks. While more than a billion telephone calls are made annually at the present time in all, by 1985, it is anticipated that the number of them will increase to approximately 2.1 billion. It is necessary to do a great deal of work in rebuilding and supplementally multiplexing cable and radio relay links.

The level of automation on the long distance network will rise approximately by a factor of 1.5. This will be achieved through the installation of new crossbar and quasi-electronic exchanges, designed for receiving a larger trunk group of communications channels. The line-of-sight "Kurs-4" and "Kurs-6" radio relay links will find widescale use along with cable lines.

With all of the obvious shifts in the development of long distance service, there remain serious short-comings nonetheless. Placing the planned capacity of new cable trunks in service is frequently delayed. High capacity radio relay links are often capable of transmitting only television programs after being placed in service, while completing their equipment for telephone conversations is put off for several years.

This is not the only reserve for more completely meeting the needs for long distance communications facilities. Because of all kinds of defects on the lines, equipment breakdowns at telephone channel exchanges, only 15 to 20 minutes per hour are used in many cases for subscriber conversations. The main administration for line, cable and radio relay facilities (the chief is comrade Tyulyayev) of the USSR Communications Ministry and the oblast production engineering administrations are called upon to give more concern to more efficient operations of the expensive trunks.

In the current five-year plan, the number of telephone in cities and rural areas should increase by a factor of 1.3, including an increase of 1.4 times in the number of telephones installed among the population. The scales of retrofitting and expanding the networks are increasing for this purpose.

An extremely important trend in technical progress in the field of transmission systems is the design of fiber optics communications lines. Experimental fiber

optics lines have already been constructed on several municipal telephone networks. It is planned that factory models of optical cable will be introduced in the current five-year plan. But such switching equipment components on municipal networks as distribution frames, boxes and distribution boxes still remain voluminous and require a high metal input.

It is planned that the capacity of municipal and rural telephone exchange will increase in the present year by 1,150,000 numbers. To successfully carry out this program, it is necessary to step up the construction of automatic telephone exchanges and putting in the networks in regions of mass residential construction.

New Developments in Television and Radio Broadcasting

The expansion of television and radio broadcasting is continuing at a fast pace in the current five-year plan. There are now more than 100,000 kilometers of radio relay channels, about 1,500 "Ekran" system stations are in operation as well as up to 90 "Orbita" stations, and more than 30 stations of the new "Moskva" satellite television broadcasting system. Based on the comprehensive utilization of ground and satellite links, a transition has been made to five coverage zones for television broadcasting (according to time zones) for the first central television program, and beginning in 1981, the transition was made to three coverage zone broadcasting of the second program. Color television coverage with the requisite quality is now provided in the majority of the populated areas of the Soviet Union.

New high power television transmitting stations and low power repeaters are being built in the current five-year plan, including those with program reception via the "Ekran" and "Moskva" satellite system. The goal is as follows: provide television broadcast coverage of the nation's territory where 90 to 92 percent of the population lives with the first program and make it possible for 70 to 72 percent of the populace to receive two programs. There will be a substantial expansion of the reception zones for local television broadcasting, primarily, republic level broadcasting.

The assignements for building-up radio broadcasting capacities are being successfully carried out, including wire broadcasting facilities. The existing network of long-wave, medium wave, short-wave and VHF radio broadcasting stations is the most diversified and one of the most powerful in the world. Central all-union broadcasting has nine program channels at the present time. Republic level, kray and oblast broadcasting is heard daily in 68 national languages of our motherland.

In the current five-year plan, capacities of all of the central broadcasting programs will undergo a further build-up, primarily through the reconstruction and retrofitting of existing radio-transmitters. It is planned that stereophonic broadcasting will be more widely introduced. Local stereo broadcasts are now heard in 32 cities. Yet another 50 cities will be added to them by the end of 1985.

The wire broadcasting network now numbers about 83 million radio repeater stations. The major trend here is that of speeding-up the transition to the multiple program

broadcasting system. There are 40 million radio repeater stations at the present time, to the plug outlets of which three programs are fed. During 1981-1985, it is planned that the number of such points will increase by no less than 20 percent. Unfortunately, the capabilities of radio repeater networks are not being fully utilized; there are not enough three program loudspeakers. Not enough of them are being produced by the plants of the Ministry of the Communications Equipment Industry.

It is quite important to continue the automation of numerous rural radio repeater centers. This has been done at 9,000 centers, and as a result, the attending personnel has been reduced by about 11,000 persons while the operating time of the radio centers has increased at the same time up 17 to 18 hours per day. It is planned that yet another 2,500 radio centers will be automated during 1981-1985.

To Improve the Work of the Postal Service

The postal service is one of the most massive forms of communications. It includes more than 85,000 enterprises. Their collectives are called upon to better and more completely satisfy the needs of the residents of cities and rural areas. One of the conditions for this is the mechanization and automation of the production processes as well as increasing the volume of containerized shipments of postal materials and printed products. The volume of such shipments will increase by a factor of 2.4 times. The material and technical base is being strengthened in the 11th Five-Year Plan. It is planned that 51 central postal enterprises near railroad services will be placed in operation.

Some 35 automatic letter sorting machines will be installed at large enterprises as well as 90 automated complexes for sorting, facing and canceling correspondence and about 100 mechanized complexes for sorting parcels and packages from the periodical press. The introduction of "Omega" system machines will be completed for transfer and other postal service cash handling operations. For the purposes of better serving the populace in rural areas, it is planned that about 750 mobile communications departments will be organized. It is planned that a transition will be made to motorized delivery of printed and postal materials during the five-year plan for more than 24,000 sections in rural areas.

The implementation of these measures in conjunction with decentralized printing, will make it possible by the end of 1985 to provide delivery of 90 percent of the copies of Pravda to subscribers as well as a number of other central newspapers the day they come out in print.

The plan for 1981 calls for increasing the length of telephone channels on long distance lines by more than 10 percent. The yearly plan calls for designing and placing in operation new and rebuilt facsimile newspaper transmission links from Moscow to 5 cities as well as 16 new television stations, 20 stations of the "Moskva" satellite television system, hundreds of "Ekran" type receivers and a large number of low power repeaters. Yet ahead is the comprehensive mechanization of 17 postal service junction center enterprises, and the overall number of them will brought up to about 300 by the end of the year.

On the whole, the assignments for the eight months in the communications sector have been fulfilled with respect to all major indicators: the volume of product output, the placement of new production facilities in service and the growth in labor productivity. Communications workers at the Sverdlovsk long distance telephone exchange, the Kiev post office and others achieved good results in socialist competition. The staffs of communications workers in the Kaliningradskaya and Kostromskaya oblasts and the Leningrad telephone exchange have come forward with a good initiative: obtain the entire rise in production for 1981 without increasing the staff.

At the same time, not all of the communication ministries of the union republics or the kray and oblast production engineering administrations are fully utilizing reserves for increasing efficiency and quality.

The quality of service to the populace is in need of improvement. The number of complaints about the work of communications organs, especially the post office, has not as yet been reduced. Losses of materials sent through the mail, their destruction and damage as well as the untimely delivery of telegrams, valuable and ordered correspondence and printed materials are still allowed.

The workers in the sector are confronted with doing a great deal yet to further improve, develop and refine postal and electrical communications services.

8225
CSO: 5500/1001

INTERNATIONAL ULTRASOUND EXPOSITION IN LATVIA

Vilnius SOVETSKAYA LITVA in Russian 17 Oct 81 p 4

[Text] As has been reported, the "Ul'trazvuk-81" international exposition opened last Tuesday at the Vilnius Exhibition Palace. It was noted at the press conference held for press, radio and television representatives that it was not by chance that the capital of Latvia was chosen as the place for holding this representative and interesting event.

The applications and branch laboratories of Kaunas Polytechnical Institute imeni Antanas Snechkus and the Vilnius State University imeni V. Kapsukas are solving ultrasonic measurement technology and quantum acoustics problems and are actively introducing the new ultrasonic technology they have created in industry and medicine. Scientists in the Republic are maintaining scientific ties with research centers in the USSR union republics as well as other countries.

This explains the fact that the Ministry of Higher and Middle Special Education of the Latvian SSR and the Trade-Industry Board of the Republic were among the organizers of the exposition.

Let's take a short walk through the halls of the decked-out Palace of Expositions. Representatives of 35 foreign companies are presenting exhibits here. The more than 200 different ultrasonic devices manufactured in Germany, Bulgaria, Belgium, Great Britain, France, Austria, Japan, Holland, Sweden and other countries evidence the fact that ultrasound is occupying increasingly strong positions in medicine, is being used widely in science, makes it possible to accelerate a number of technological processes, to obtain needed information about the internal structure of matter, physical-chemical properties of solid bodies, liquids and gases. In truth, ultrasonic waves have a huge set of widely varying professions.

We are standing in front of the exhibits prepared by the "Intermed" organization (GDR). These instruments are used for both therapeutic and diagnostic purposes. One of the devices exhibited by the German manufacturers -- a biomonitor -- can be used successfully to monitor blood pressure and automatically record the condition of a patient.

There is a whole group of instruments which let us "look" inside -- to obtain a picture of internal human organs. Visual information facilities make it possible to track the progress of various pathological processes. Medical representatives will likely be interested by the ultrasonic equipment models presented by the General Equipment Medical company (Belgium), by Satra (Great Britain), by TsZhR (France), by Piker (Austria), by Siemens (FRG), by Medata AB (Sweden), and the Aloka Company (Japan).

In conclusion, here are some short interviews with organizers and participants in the exposition:

Professor V. Domarkas -- President of the Scientific Technical Center of the exposition and prorector of the Kaunas Polytechnical Institute imeni Antanas Snechkus:

--In our opinion, the exposition which has opened in the halls of the Palace should interest primarily a large contingent of specialists working in the area of application of ultrasonic waves. In this connection, acquaintance with the numerous exhibits of foreign firms will undoubtedly be useful for them. There is a great deal to be gained from studying the installations, observing the operation of equipment and devices, and finally from direct conversation. We hope that the exposition will also serve to create favorable conditions for contacts on a commercial basis, and on the basis of mutually profitable cooperation between the representatives of scientific and production organizations and the creators of the devices. We have also planned to hold a seminar and several symposia.

A. Moybrink -- President of the Nachrichtenelektronik Intermed Company (GDR):

--We have only brought a few of the devices which we produce to Vilnius. We produce a total of over 50 instruments, but not all of them use ultrasound. We brought some of them in order for our Soviet friends to have a more complete understanding of the list of items we produce. We are pleased by the attention the visitors are giving our exhibits. I would also like to say that we are most impressed with ancient Vilnius, and have been touched by the cordiality and hospitality of its residents.

A. Dikin -- President of the Elektroimpeks Company (Bulgaria):

--At our booth, Vilnius residents and guests of the city can obtain extensive information on the technical advantages of Bulgarian ultrasonic devices. This includes primarily equipment for active interaction with processes occurring in liquid media. In addition, we are demonstrating equipment for ultrasonic welding of various types of plastics. The devices which we produce are widely used in electronics, radio technology, machine building and other branches of the economy. The "Ul'trazvuk-31" exposition has also allowed us to become acquainted with many interesting exhibits. I would like to express a kind word to the organizers of this event.

6900
CSO: 5500/1004

INTERNATIONAL SVYAZ'-81 COMMUNICATIONS EQUIPMENT EXHIBITION IN MOSCOW

Moscow EKONOMICHESKAYA GAZETA in Russian No 37, Sep 81 p 24

[Article by M. Makhlin: "International Exhibition in Moscow. 'Communications-81'"]

[Text] The international exhibition of communications systems and equipment, "Svyaz'-81", is being held from the 2nd to the 16th of September in Moscow's "Sokol'niki" park under the slogan "Communications Gear in the Service of Man and Society". More than 400 foreign organizations and firms are participating in it.

So Great Distances are Shortened

More than 3,000 exhibits are presented in the Soviet section. From space satellites and the latest electronic devices to radio amateur equipment made by the amateurs themselves and postage stamps: such is the wide range of the exhibition.

Some 220 Soviet enterprises and scientific research institutes familiarize the visitor with the formation of the overall state Unified Automated Communication System (YeASS). There is nothing on its scale in the world. The system of satellite communications within the nation is also unique. Ground station equipment and models of the "Molniya-3", "Ekran" and "Gorizont" satellites were shown at the exhibition. Because of them, information is transmitted to the most remote point in the nation in an operationally timely manner, as well as issues of central newspapers and television and radio programs. The new television center constructed for the 1980 Olympics and now operating around the clock makes it possible to view central television programs at a time convenient for the residence of various areas. The "Ekran" equipment complex for receiving satellite television transmissions, which is designed for a small settlement, is compact and comparatively inexpensive (15,000 rubles in all).

A special stand was set aside for showing our nation's participation in the international "Kospas-Sarsat" project. The USSR, along with Canada, the U.S. and France is solving the problem of detecting ships and aircraft in distress and determining their coordinates by means of radio buoys and low altitude satellites. Work on the organization of the international maritime satellite communications system "Inmarsat" was also shown.

And there was an altogether earthbound exhibition: an automated technical operations center for a municipal telephone exchange of 300,000 to 500,000 numbers.

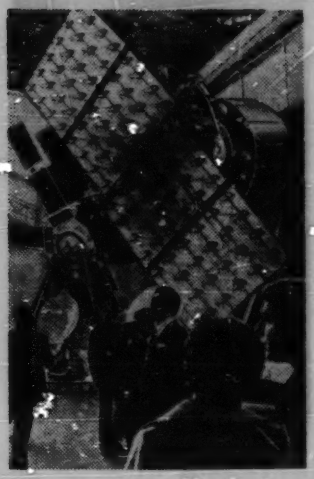


Figure 1. In the photo: space communications facilities in the Soviet section of the exhibit.

Figure 2. Such dispatcher communications consoles for agriculture have already been delivered to the USSR from Bulgaria.

Figure 3. Hungarian long range communications gear.

Figure 4. Automatic telephone answering unit for information services in the Polish Peoples Republic exhibition.

The multiple control console system for generating data using microcomputers, the SM-1800, will become a reliable assistant for economists and communications engineers. The outlays for its introduction will be recovered in less than half a year. Because of what? The time for processing economic data will be curtailed by a factor of more than 10 times, while 25 times less time is required for programming specific problems.

The post office is also adjusting to the pace of the space era. A sorting line with a system for zip code recognition on envelopes was demonstrated at the exhibition. Its speed is 28,000 letters per hour.

Communications gear made by Soviet enterprises has deserved authority in the world market. Telephone, telegraph and electrical-acoustical equipment as well as

radio and television equipment are being exported - more than 3,000 product designations in all.

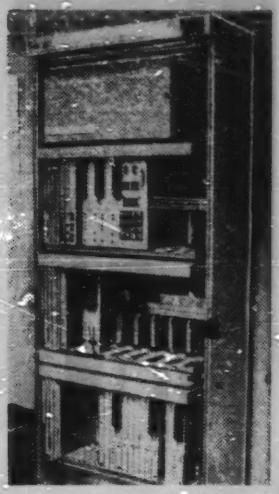


Figure 5. A telephone exchange with a fiber optics systems was shown in operation in the stand of the Finnish "Nokia" company.

Figure 6. It is easy to determine the location of a heat leak from a building or a pipeline using the infrared devices of the Swedish "AGA" company.

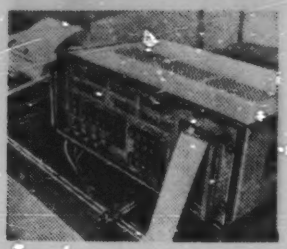


Figure 7. A multifrequency signaling unit for checking tone code transmitters and receivers is demonstrated by the Danish "Elmi" company.

Figure 8. New telephone exchange equipment in the GDR exhibition.

Figure 9. Various control consoles are shown in operation in the Czechoslovakian stand.

The Fruitfulness of Joint Efforts

The equipment being demonstrated by foreign participants in the exhibition is also distinguished by a high technical level. The fruitful cooperation within the CEMA framework and based on bilateral accords has significanly enriched the stands of Bulgaria, Hungary, the GDR, Poland, Czechoslovakia as well as Yugoslavia.

The "Ekektroimpleks" Association (Bulgarian Peoples Republic) is demonstrating remote control repeaters and repeater amplifiers with a doubled efficiency. The electrical power consumption to run them has correspondingly been cut in half. Custom-made equipment for long distance telephone and telegraph service as well as new radio relay equipment units is being shown by the "Budavoks" Association (Hungarian Peoples Republic). Teletypes and high capacity telephone exchanges were represented on the stand of the GDR. During the time the exhibition is open, there will be a festival transmission to Soviet Communications specialists from the four million subscriber set of switching equipment of the GDR.

The Polish "Elektrik" Association brought new models of telephone sets to the exhibition - from ultramodern to decorative old-fashioned models, as well as an automated telephone answering unit which gives subscribers needed information. The "Kovo" Association (CSSR) familiarizes visitors with miniature and high efficiency electromechanical filters and radio studio equipment. Electronic equipment for automatic telephone exchanges is exhibited on the stand of the "Nikola Tesla" enterprise (Yugoslavia).

Of Mutual Benefit

The exhibition has attracted the attention of numerous foreign organizations and companies. Our northern neighbors form Denmark, Norway, Finland and Sweden are taking an active part in it.

An old partner of Soviet foreign trade organizations was numbered among the largest exhibitors: the Finnish "Nokia" company and its subsidiary firms. Cable products, telephone exchanges for various purposes with microprocessors, including fiber optics systems, where the functions of the wires is performed by an extremely thin glass fiber, are shown here. The Swedish company "Svetsiya" acquaints visitors with equipment for the production of electronic printed circuit boards and the "AGA" company with infrared equipment. The Norwegian "Norsk Data" and "Mikron" brought the latest microcomputers to the exhibition and the Danish companies of "Elektronik", "Elmi" and "Storno" are demonstrating electronic instrumentation for communications.

Numerous unique and new designs can be seen at the exhibition stands of the companies of other nations, participants in the "Svyaz'-81" exhibition: Austria, Great Britain, Spain, Italy, Canada, Liechtenstein, the Netherlands, the U.S., France, the FRG, Switzerland, Japan as well as West Berlin.

Tens of thousands of Moscow residents and guests of the capitol visited the exhibition during the first days it was open. Information is already coming in to the commercial center on the course of conversations and the conclusion of mutually advantageous contracts. A symposium has been organized within the framework of

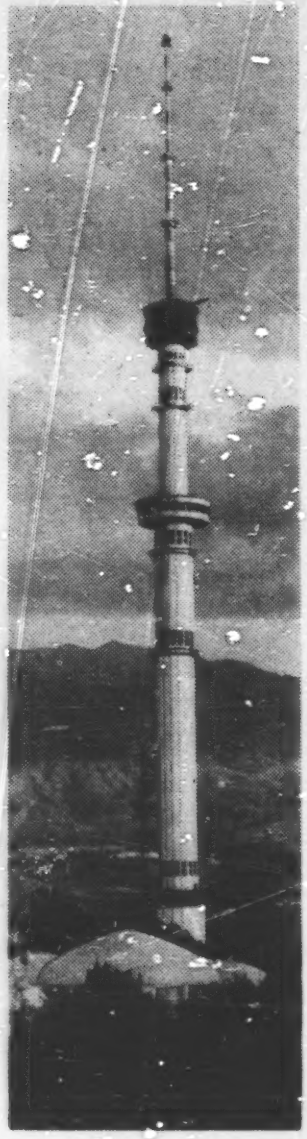
"Svyaz-81", at which 58 papers of Soviet and foreign specialists will be heard. This large international show will undoubtedly serve to strengthen the existing and establish new mutually advantageous contacts among business groups from various nations.

8225
CSO: 5500/1001

NEW TV TOWER FOR SOUTH KAZAKHSTAN

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 4 Oct 81 p 2

[Text] Construction is now completed on the Alma-Ata television tower, the highest structure in the earthquake zone of the country. The white and orange needle of the tower reaches the planned 372-meter mark; together with the Kok-tyube mountain on which it is built, the steel spire reaches a height of over a kilometer. This unique structure has been completed 6 months ahead of schedule. The installation crew from the "Kazstal' montazh" trust, headed by Yuriy Leonidovich Nosarev, honored builder of the Kazakh SSR and holder of the Order of Lenin and Labor Red Banner, distinguished itself here: this crew has participated in the construction of many high structures throughout Kazakhstan. Along with other builders, this crew is now dismantling the temporary machinery and devices and finishing off the interior of the gigantic shaft of the tower. The introduction of this TV tower will double the reliable reception of television transmissions in south Kazakhstan.



The Alma-Ata television tower.

6900
CSO: 5500/1004

MEDIA COMMISSION OPPOSES NORDSAT, FEARS HARM TO LOCAL TV

Copenhagen BERLINGSKE TIDENDE in Danish 2 Nov 81 p 5

[Article by Merete Bjørn Hanssen]

[Text] The Nordic Council of Ministers will decide this month whether or not to start the costly Nordic satellite project, NORDSAT. Today, the report on the initial results of the work of the Danish Media Commission will appear, the "Report on NORDSAT." This report is an important contribution in the efforts to determine the Danish position on the project.

The Media Commission, which was set up by the prime minister's office in the spring of 1980, is, with its 60 members, the hitherto largest Danish commission. Its task is, in 3 years, at a cost of more than 1 million kroner annually, to "provide the basis for the formulation of a joint public media policy."

It is already known from the final meeting in the summer of the commission on the report that a majority of 34 of the commission's 60 members cannot recommend Danish participation in the NORDSAT project. The report now published provides the hitherto most comprehensible presentation of this large Nordic project, as well as the arguments for an against Danish participation in it.

The majority, comprising, among others, the chairman of the commission, Professor H. P. Clausen, the chairman of the Radio Council, Birte Weiss, Jørgen Kleener, deputy chairman, and the director-general of the Danish Broadcasting Corporation, L. Bindsløv, the deputy chairman of the National Federation of Local Authorities, Erling Tiedemann, H. Sølund, deputy mayor, and the chairman of the Danish Library Association, Mayor Karl Johan Mortensen, opposed the project, primarily because it will exclude the possibility of a regional expansion of Danish TV. The arguments against the project are the following:

The total Nordic costs, calculated in terms of 1979 prices, are estimated to be at least 5 billion kroner over a 20-year-period, but the estimate is not considered tenable. The Nordic joint co-operation will not be strengthened in a way that is commensurate with the costs--irrespective of the uncertainty

as to their magnitude. If the realization of a Danish TV-2 project is tied to NORDSAT, regional development will be excluded. The costs of programs for a Danish TV-2 will be the same via the satellite as via a ground network like the one now used by TV. NORDSAT requires coordination of the programs, which will have unacceptable consequences to the independence of the individual broadcasting systems. The satellite system--it is feared--is technically vulnerable.

Twelve members of the commission--all of them government officials--support NORDSAT with Danish participation, provided the negotiations will have satisfactory results and the necessary economic resources will be available. The twelve government officials are among the group of a total of 23 members of the commission who, for various, largely Nordic cultural policy, reasons, support the project, but within this group as well there are four members who have expressed their doubts regarding the economic aspects.

7262
CSO: 5500/2044

FREE MARKET IN PHONE-EQUIPMENT SALES TO START IN 1982

Copenhagen BERLINGSKE TIDENDE in Danish 11 Nov 81 pt II p 3

[Article by Finn Knudstrup]

[Text] As of the New Year, the telephone companies will no longer have a monopoly on telephone equipment. At that time, the market will become free, and that means that extremely ingenious microprocessor equipment will be marketed which will put the old grey telephone in the doghouse as a relic of the past. BERLINGSKE TIDENDE has looked into the fair new world of telephones which will await us. A world in which our telephones may become our secretaries but also a world involving the risk of even more stress in the working-day.

The term "Port-a-touch" is just one of the many names in the new telephone era. A "Port-a-touch" is a battery-operated telephone of the shape and size of a pocket-size calculator. It renders telephone directories almost superfluous as the instrument will memorize up to 80 coded numbers--and will even call the numbers itself!

The procedure: A business man with the need to be able to call up to 80 specific numbers, carries his "Port-a-touch" in his briefcase. If he/she is attending a meeting in town and wishes to contact the main office in London, he/she lifts the receiver nearest by, pushes the code "L 1" on the buttons of his/her "Port-a-touch." The small piece of equipment then fires off a cascade of audio impulses--and the number has been called. This telephone is expected to be marketed in 1982 at an approximate cost of 1,300 kroner by the firm of Peter W. Holm, Christianshavn.

36-Year-Old President

Peter W. Holm himself, the merely 36-year-old president (he refers to himself as "president") is a former pilot and has on his trips around the world encountered supplementary equipment for telephones, the contracts for which he has secured through his import/export company. He is ready for the market to become free as of the New Year, with a series of receivers and a company with a staff of 35 people, with offices not only in this country but also in Sweden and the United States. His annual turnover has already reached nearly 8 million

kroner, and the president of the company, who drives a Jaguar, does not conceal the fact that there is a lot of money to be made in this fair new world.

Peter W. Holm has great hopes from another piece of equipment as well which will become legal as of the New Year, a so-called call-diverter. This is a box which may be connected with any telephone, and which may be programmed to switch calls to another telephone number without the slightest click. The call-diverter thus makes it possible to close, for example, a branch office during a particular week-end or during a vacation period. When the number is called, the call will be switched, without a sound, to the one who is on duty. The system may be expanded in such a way that the switch is programmed from the outside via the telephone.

Attorney in Trunks

Another example: The attorney who would like to spend a sunny working-day in his beach cottage has a call diverter take care of the office. Clients calling the office have no idea that the dignified attorney actually is taking his calls on the terrace of his beach cottage.

This piece of equipment, however, incorporates a safety measure. The person placing the call will, at the most, have to pay for a call to the telephone number selected. Even if we had our attorney receive his calls at a hotel at Cannes, his clients would thus not be billed for a call to that place.

Without the device for programming the switch from the outside, the call-diverter will cost 4.500 kroner--and with that device, twice as much per telephone.

Excellent for Espionage

Peter W. Holm has got still other exciting things in his small show-room at Christianshavn: the telephone that will do everything--even render a secretary superfluous. The receiver has a built-in key-board and the accompanying box a telephone-answering machine. A small, pocket-size, electronic transmitter enables the owner of the equipment to call his telephone-answering machine from all over the world and have messages repeated and, if he so desires, to dictate new ones. An electronic voice records the time of each message received, stating date and hour.

This piece of equipment has got one small drawback, however, viz. that there are only ten different transmitters to be had. If an enterprise intends to undertake sabotage for purposes of competition, it may thus purchase all of the ten transmitters--and it will, thereby, have the possibility of listening in on all the telephone-answering machines of the entire world and even dictate false messages--for example, that the rival firm regrets to tell the customer that it has been closed on account of suspension of payments and that it refers the customer to the former enterprise.

Faced with that possibility, Peter W. Holm assures us that they will have 100 different codes by the New Year, when it will be a costly affair listening to the telephone-answering machines of other people.

Prohibited Equipment

The firm at Christianshavn also offers a mini-telephone where a flap gives access to a key-board. The firm has also got wireless telephones which one can take along into the yard, seeing that the main telephone has got a transmitter to the telephone in the yard.

However, all of these novel devices have one thing in common, viz. that they are prohibited. It is true that the Danish telephone companies have accepted that the monopoly on equipment be lifted--but they do not want to give away the telephones themselves. Not yet. At best, alternative telephones alone may be purchased through the telephone companies, whereas the equipment as of the New Year may be purchased anywhere as long as it has been approved by the authorities.

"I Do not Sell Unemployment"

Peter W. Holm: "In my opinion, they ought to permit the sale of everything. For we know that people who are travelling will, nevertheless, buy telephones abroad to take home with them. One has got a free choice as close by as at Frankfurt Airport. The remainder of the monopoly has got to be lifted--for people still buy what they fall for."

Peter W. Holm is not only an importer of a number of foreign articles in the area of telephone equipment. He actually exports more than he imports; the call-diverter, for example, is being made in cooperation with Danish electronics companies and is exported especially to the United States. Peter W. Holm has even started selling the new pushbutton telephone of the Copenhagen Telephone Company in the United States. It is popular in that country on account of its design. He also sells fully automatic taxa exchanges where the customer calls a telephone answering machine and requests a taxa. The telephone answering machine, subsequently, repeats the request on the taxa telephone.

The result is, of course, that it is technically possible to put telephone operators out of work, just as a number of the other devices marketed by "the president" constitute a threat to the traditional work of secretaries. To this, the president says:

"Those who are employed will get still more to do and will, therefore, benefit by the fair, new world. but I do not believe that we are selling unemployment. Many office workers actually waste their time on tasks which may equally well be handled by computer technology--so that the office worker in question may perform more meaningful work than, for example, consulting a telephone directory."

7262
CSO: 5500/2044

BRIEFS

GROUND STATIONS FROM JAPAN--It was the Japanese who carried away the order for 17 million kroner for two satellite ground stations for the Postal and Telegraph Services. They will be used for telephone communication between Denmark and the offshore drilling platforms in the North Sea and between Denmark and Greenland. The contract was concluded with the Danish agent, JAI, the engineering firm of Jørgen Andersen, Glostrup, and the reason why the Japanese got the large order is the vast knowledge which the supplier, Nippon Electric Co., has in the area, as well as the confidence associated with the fact that they have already supplied similar stations to Greenland and the rest of the world, even to the home of technology, the United States. [Text] [Copenhagen BERLINGSKE TIDENDE in Danish 30 Oct 81 p 31 7262

CSO: 5500/2044

BRIEFS

NEW MOBILE PHONE EXCHANGE--Work on the automatic Nordic Mobile Telephone System (NMT) is proceeding according to plan in Finland. Testing of the automobile telephone exchange in Lahtis will occur in November. The NMT network will be open for experimental use in December. About 100 mobile telephone users will participate in the experiment. In addition to the Post Office and the Telecommunications Administration, several state service departments and various telephone manufacturers will be involved. Actual service will start at the beginning of March. Construction on the network of base stations required by the NMT system is in full swing and in early March about 20 base stations will be operating south of the line connecting Bjorneborg, Tammerfors, Lahtis, Kouvola, and Fredrikshamn. By 1986 the network will stretch as far up as Rovaniemi. The NMT system has been developed through the cooperation of the telecommunications administrations in Finland, Norway, Sweden, and Denmark. As a result of this cooperation, an automobile telephone system has been developed that is among the most advanced in the world. The Nordic countries are divided into a number of service regions for the NMT system. Each region has a network of base stations. When a mobile telephone leaves one service region and enters a new region, this is reported automatically to the user's "home" exchange. In this way, the exchanges will know where the mobile telephone is, even if it enters another Nordic country. In this way, calls to vehicles can be connected automatically regardless of where the customer happens to be. The NMT system began operating in Sweden at the beginning of this month, Norway will begin in early November, and Denmark at the beginning of next year. Each year the network's coverage will be improved and by 1990 it will cover practically all of the Nordic countries. In addition, the NMT network is offering special services such as, for example, automatic transfer of incoming calls to another number, call requests, restrictions on outgoing calls, etc. The NMT network will also make it possible to have telephone booths, buses, and ferries. [Text] [Helsinki HUFVUDSTADSBLADET in Swedish 24 Oct 81 p 17] 9336

CSO:5500/2038

RADIO-MONT-BLANC GOALS, BACKGROUND DESCRIBED

Paris LE MONDE in French 10 Nov 81 p 19

[Article by Isabelle Vichniac]

[Text] At midnight on Sunday, 8 November, a new peripheral radio station, Radio-Mont-Blanc, began to broadcast from Italy to France. An initial experiment in monophony with a provisional wave length of 103.5 Mhz, Radio-Mont-Blanc should broadcast 24 hours a day in stereophonic sound beginning on Tuesday, 10 November.

Started by Gerard Stuffel nearly 6 years ago, this private radio station, which has rather considerable backing (LE MONDE, 21 and 24 January) previously aimed its programs only at the Val d'Aosta, an autonomous region of Italy.

Headed by Roland Dhordain, who has a background in radio and television (assistant director of radio broadcasting in 1964, he was named director of radio broadcasting in 1968, then director of the first television network in 1971), the station, whose transmitter is particularly powerful, plans to cover an area as far as Lyon and even Valencia.

Radio-Mont-Blanc has the highest transmitter in the world (at 3,930 meters on the Italian slope of Mont-Blanc, at Tre-la-Tete). Construction of the antenna took 3 years and required 800 helicopter flights. Because of the cold and ice, guides and construction workers were able to work only a total of 180 days. The transmitter's power will come from three generators supplied with kerosene, 18,000 liters of which have been stored at Tre-la-Tete, a 5-month supply. The antenna is protected from the wind (gusts may reach 280 kilometers per hour) by a kind of hollow tower 10 meters high. However, the station's operation is by remote control from the Val d'Aosta because at that altitude, human presence is possible only 80 days a year.

Radio-Mont-Blanc wants to be independent, international (or more precisely, multi-regional) and essentially French-speaking. Its main objectives are to ensure, within an area of cover divided by borders which many deem to be artificial, the continuation of the French language and to respond to the information needs of regional listeners who, to cite but one example, do not care very much about the signs along the French highways but who are very interested in meteorological conditions on both sides of the Alps.

According to its director, Roland Dhordain, "Radio-Mont-Blanc should be a radio of companionship and contact, a radio of dialogue, giving priority to technical assistance and renewed gaiety. Music will occupy 80 percent of all programming; information and services 20 percent." It will be "a neighborly, closeby radio station," seeking to get away from any "Parisianism" and trying to get men to communicate.

Radio-Mont-Blanc has existed as a private station in the Val d'Aosta since 1976, thanks to the efforts of Gerard Stuffel, former promoter and entrepreneur of entertainment, and a Val d'Aosta native, Mario Stevenin, for whom the top priority has always been the defense of the French language and culture. Like many Val d'Aosta residents, he has never forgotten that Italian was the language of fascism.

Five Minutes of Advertising

In 1978, the station acquired a new transmitter in order to better cover its area and built a broader financial base thanks to the participation of two officials of the weekly LE MESSAGER (published in Thonon): Bernard and Laurent Mossu. The owner of the Geneva daily LA SUISSE, Jean-Claude Nicole, then came on the scene. All these promoters succeeded in putting together the financing (some 15 million French francs) needed for the new format of Radio-Mont-Blanc. It has five minutes of advertising per hour, which must respect the "moral and political restrictions" imposed in France and Switzerland in the audiovisual field. This advertising will involve only products available in both countries.

Radio-Mont-Blanc is governed by Italian law. As far as France and Switzerland are concerned, there is a legal vacuum for the time being. The promoters hope to enjoy the de facto status of certain peripheral stations, as Europe 1 has for 20 years. To date, the International Telecommunications Union, whose headquarters are in Geneva, has not assigned it any frequency.

Whatever the case, station officials, who are careful not to interfere with the broadcasts of Lyon stations, do not seem to have the slightest fear of any jamming.

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CSO: 5500/2048

SATELLITE PLANS, OTHER ACTIVITIES OF RADIO TELE-LUXEMBOURG

Zurich NEUE ZUERCHER ZEITUNG in German 19 Nov 81 p 43

[Article by W.H.: "Radio Luxembourg, a David with a Satellite Bonus"]

[Text] Radio Luxembourg is putting fear into its West European broadcasting colleagues with its high-flying plans: The first one to put a direct satellite in operation 36,000 km above the equator at the position of 19°West will in the long run skim the cream off the top of the advertising business. And the managers of the Compagnie Luxembourgeoise de Telediffusion (CLT) have made up their minds to be the first. It has always been the business policy at the Louvigny Villa to be the leader of the pack and to profit handsomely from having the inside track. As early as 1929 the CLT's predecessor, the CLR, secured from the Luxembourg government exclusive usufructuary rights to all future radio services on all channels allocated internationally for this purpose. The Grand Duchy receives a complete program in exchange and enjoys a healthy share of profit from the transmissions and receipts that spill over its borders: Radio Tele-Luxembourg (RTL) is the largest taxpayer in the country. Moreover, it pays license fees and also puts money into the coffers from compatible activities on the side. The company has been able since 1973 "to initiate and pursue any activity which resembles the emission of radio and television broadcasts or is connected in any way with said emission."

The Realm of the Media Giants

Via 10 transmitters -- in Beidweiler, Marnach, Junglinster, Hosingen and Dudelange -- the RTL provides half of Europe with a vast number of radio programs in the low, medium, high and very high frequency ranges. The domestic program is broadcast on VHF channel 18 in the Luxembourg dialect -- 3,400 program hours every year. The Dutch program is limited to 30 minutes a day -- from 7:00 to 7:30 -- and despite competition from television newscasts, the MF broadcasts have a large regular audience in the Flemish part of Belgium and in The Netherlands.

The French LF-range program has been a hit for decades. The RLT has managed to win the loyalty of around 9 million listeners -- by its own count. In a tough market struggle for the audience's favor, the RLT is fighting with (and against) Europa 1 for the larger share of the advertising budgets. At the end of 1980 and the beginning of 1981, Europa 1 was leading by a nose, but RLT is confident of having meanwhile made up for the lost ground.

The lesson of holding one's ground in the face of competition has finally been learned: The English program, which is aired in the MF range at 7:30 in the evening, was without competition for a long time -- until the IBA's commercial British regional stations threatened to kill off the RTL's offering, which had suddenly come to be regarded as "old-fashioned." It nevertheless succeeded in hanging on to up to 4 million listeners a day by using transmitters that were more mobile (in the HF and VHF ranges as well), by introducing an intimate civic radio assistance program (Community Radio) and by adapting to the frequently fluctuating expectations of the public.

For the German radio program -- 19 hours a day, or nearly 8,000 in a year, in the MF, HF and VHF ranges -- the CLT claims as many as 6 million listeners; even its public colleagues concede a figure close to 4 million. Declared repeatedly to be outdated, bulldozed by the pop music channels gradually established by the ARD [Working Association of Statutory Broadcasting Corporations of the Federal Republic of Germany] and in other ways considered a thing of the past, the RTL enjoys uninterrupted vigor. Very early in the morning and very late at night, when no manufacturer of soap powder wants to consign a spot to the station, radio missions send their messages into the homes of Luxembourg listeners at a bargain price.

Tele-Luxembourg, the Second Pillar

The second pillar of support for the CLT offering is Tele-Luxembourg on channels 7, 21 and 27. Barely 2 hours a day are devoted to the Luxembourg audience; most of the rest, in French, wends its way throughout Belgium and France via the dense cable networks. The entire program is produced using a mini-crew; the difference between cost and output is pointed to with pride. To be sure, when the RTL fare is compared to that of the "public" systems, it is a poor comparison in terms of the programming mission and the programs offered.

Indeed, the specter of substantive and commercial starvation has been hanging in the air ever since the CLT got wind of the opportunity offered by the technical, legal and administrative telecommunications hairsplitters at the last WARC [World Administrative Radio Conference] session -- probably more out of "naivete" than anything else, in the opinion of benevolent satirists. At that time every country was allotted five channels for direct satellites, and Luxembourg found itself in the best position in Europe --like the fox in the chicken coop. The fact that the broadcast signal has to be "national" is a legal/technical fig leaf; the RTL could be fetched down from the sky anywhere from Scandinavia to Italy, from England deep into the communist east.

There is no doubt that the public-auction politics hastily developing around satellites -- the FRG and France, Switzerland and Great Britain, and Austria as well are in the front lines in this battle -- was fueled initially by Luxembourg's ambitions. Even if the satellite is a long time coming, it is destined to add further strength to the mighty empire that is represented today by the three letters CLT.

Who Owns Radio Luxembourg?

The franchise agreement made between the Grand Duchy and the CLT in 1973 led to a division of stock shares: 70 percent are Category A shares -- registered shares

which require consultation with the government of Luxembourg before they can be transferred. The government may veto a transfer under the following conditions:

If the purchaser is a foreign power, a political group or the like, one which represents a threat to the neutrality of the broadcasting station and its programs and/or the private character of the company;

If the prospective purchaser of shares operates as a business competitor; or
If there is appreciative interference with the composition of or balance among the shareholders who hold at least 1 percent of the company's shares.

The remaining 30 percent (Category B) are bearer shares that may be transferred freely at any time. Ownership of the shares can be determined only through patient investigation, and even then it is difficult to trace all the interrelationships and provide figures that can be proved definitively.

The overall picture is a simple one at first glance: The Audiofina holding company owns 29.3 percent; the Fratel holding company, 25.3 percent; the Compagnie des Compteurs, 12.8 percent; a group headed by Hachette owns 16.2 percent; the Paribas group has 10.3 percent; and ownership of 6.1 percent is dispersed. The picture becomes more complicated when the individual holding companies are subjected to closer scrutiny: Audiofina is a Luxembourg company "for audiovision and finances"; 49 percent of its stock is owned by the Compagnie Bruxelles-Lambert, Belgium's second-largest financial group. It owns mainly printing establishments and paper mills. The next-largest partner, with 28.5 percent of the stock, is Agence Havas, the French multinational advertising agency. (In turn, the French government owns 51 percent of Havas.) Electrorail, owned by the big Belgian-French Empain industrial family, owns 4.9 percent of Audiofina's stock. The rest, about 18 percent, is dispersed among Luxembourg and Belgian stockholders.

Fratel (Societe Financiere pour la Radio et la Television) is also a Luxembourg holding company. The just described Audiofina holding company owns 95.9 percent of Fratel; only 4.1 percent of its stock is dispersed among Luxembourg stockholders. Thus, Audiofina and Fratel together have at their disposal 54.6 percent of the CLT's stock.

The Compagnie des Compteurs is a wholly-owned subsidiary of the French-American Schlumberger group, whose product mix ranges from water meters to extremely complex microelectronics equipment. Paribas is also a French holding company. (It was wholly owned by the Compagnie Financiere de Paris et des Pays-Bas until mid-October 1981, when it was nationalized by the Mitterand government.) Hachette is France's largest publishing company. Matra, the electronics and weapons concern, acquired a majority interest in Hachette in late December 1980.

Venturing a third round of figurative brush-cutting, one finds a much more complicated situation -- we shall consequently cite but a few examples. The Havas interest in Audiofina has already been mentioned. Havas owns the Information et Publicite (IP) in its entirety. In Belgium the Agence Havas Belge acts in concert with its companion company, the IP Belgique; 10 percent of this firm is owned by Havas Belge, 36.8 percent by the IP and 34 percent by the CLT. IPL, the Havas subsidiary in Luxembourg is endowed by the IP (66 percent) and the CLT (34 percent). The company's business is the exclusive acceptance of advertising for Radio Luxembourg.

The second example pertains to Paribas. We have said that it is a wholly-owned subsidiary of the Compagnie Financiere de Paris et des Pays-Bas, which in turn is wholly owned by the Banque de Paris et des Pays-Bas. This bank also owned an interest in Hachette before it was taken over, but the bank probably did not lose very much because it is also a part of Matra, the new owner. Here again -- and this is cited as the last example of the complex interrelationships -- not only does Matra, with its new holding company, own a considerable interest in the CLT; the Floirat group has also gotten into the act via the holding company, with a 17-percent interest.

What Does the CLT Own?

If an overall view of this complex empire is to be gained, it is not enough to ask who owns the CLT, for the company itself is not inactive in the business field. It owns a 40.8-percent share of Luxair, for example, and above all it is exceedingly active in the areas of music and phonograph records, advertising and motion pictures. The IPL has already been mentioned. But in Luxembourg the CLT also owns an interest in the Eltrona Interdiffusion cable company and holds 99.5 percent of the stock in RTL Productions, a television production company.

In Belgium the CLT owns 49.5 percent of Radio Tele Musique Belgique-Hollande, a music and literature publishing house; 10 percent of the latter's subsidiary, Apollo; 9.1 percent of Sport TV, which is the exclusive agent for advertising rights at major international sporting events -- and it owns 34 percent of IP Belgique, a subsidiary of Havas. In Holland the CLT owns a 35-percent interest in Europe Video, whose studios are located in Luxembourg. The company owns extensive interest in France: the Ediradio program production companies (70 percent); Tele Union (50 percent); Video Tele France (71 percent); Video Centre International (51 percent); and Gaumont, a producer of motion pictures (11.5 percent). The CLT owns 50.25 percent of DIC Paris, the largest producer of animated cartoons. It is thus in a position to produce in "its own houses" a major portion of its own television productions and advertising spots. The CLT is the sole owner of TELESTAR, the weekly program journal (weekly circulation: 550,000); it owns a 42-percent interest in BIEN PUBLIC, a daily newspaper in Dijon.

In the Federal Republic of Germany the IPA -- a companion to IP, IPL and IP Belge -- takes care of advertising (34 percent); the CLT owns 50 percent of the Radio Tele Music GmbH /limited liability cooperative/ and the TV Star GmbH. In the Saarland the CLT took the precaution of buying a 48-percent interest in a new corporation for private television. The RTL is represented in Great Britain by its wholly-owned subsidiary, Radio Luxembourg London Ltd. Added to this is its 50-percent interest in the Audio International London production company. And even the Swiss are touched by the CLT -- with small shares in two advertising agencies, Radio Publicite (10 percent) and Fonika (5 percent).

7458
CSO: 5500/2052

NEWLY-AUTOMATED MOBILE PHONE SYSTEM PUT INTO OPERATION

Oslo AFTENPOSTEN in Norwegian 11 Nov 81 p 44

[Article by Torill Nordeng]

[Text] At 1215 hours on Tuesday Kjell Holler, general director of the Telecommunications Board, was able to start using the new automatic mobile telephone system in Norway. To begin with the automatic mobile phone system will make it possible for subscribers in the eastern part of the country to make direct calls to over 60 countries around the world. Sometime in 1985 the system will cover the entire country. Holler's first conversation over the automated mobile telephone went to the NRK [Norwegian State Radio] correspondent in Bonn, Jens Sollie. The connection was very good.

The manual mobile telephone service in Norway was introduced 15 years ago. Today Norway has more mobile telephones than any other country in Europe, a total of about 31,000. "With our automatic system we will also be a nation with one of the most modern systems," said Holler at a press conference in Oslo yesterday.

With the Ostland region the first to be hooked up with the Telecommunication Board's new system talks will be handled via roughly 70 base stations from Dovre in the north to Kragero in the south. When the entire country is plugged into the system four computerized mobile telephone centrals over the entire country will handle connections between base stations. The Oslo central will cover eastern Norway.

In contrast to the manual mobile telephone system the new Nordic mobile telephone system (NMT) will spare users from the lines that can occur at manual centrals. Separate microphones and loudspeakers make the mobile telephone simple and flexible to use. It will give more protection against people listening in, better sound quality and the automated central will automatically keep track of where the apparatus is located. It will no longer be necessary to report where one is. The system is also designed to provide special services such as automatic telephone answering and various types of holding.

The new kind of mobile telephone will cost between 20,000 and 28,000 kroner per apparatus. The Telecommunications Board estimates that 40,000 automatic mobile

telephones will be sold in Norway by 1985. It is estimated that there are 2000 apparatuses in operation through 1981. The Telecommunications Board has given preliminary approval to three models and at the opening on Tuesday concessions were granted to 140 apparatuses.

The NMT system will be cheaper for consumers to use than the old manual system. Conversation rates will be reduced due to reduced operating expenses with metered rates. One meter step lasting 15 seconds will cost 0.75 kroner. With the manual mobile telephone the rate today is 3.50 kroner per minute.

The development of the new automatic mobile telephone system in Norway is the result of close cooperation on development by the Nordic telecommunications agencies. In the first expansion stage the Telecommunications Board invested around 75 million kroner, with 20 million kroner going to the central exchange in Oslo and 55 million to the base stations and lines. The figure corresponds to 1 percent of total investments by the Telecommunications Board in that period.

First consultant Ivar Sliper of the Telecommunications Board stressed that the changeover to automatic mobile telephone service in Norway will not lead to job losses. The expansion will occur in stages and the Telecommunications Board estimates the manual stations will be maintained through this decade. "After that it will be natural to have the personnel from the manual stations transfer to other activities within the telecommunications system," said Sliper.

In the beginning the Telecommunications Board will have the capacity to handle conversations for 2500 subscribers in the Ostland region. Kjell Holler would not guarantee that there would be no waiting time to get hooked up to the new system. But he stressed that large safety margins have been included in the user forecasts and he thought the Telecommunications Board had embarked on a realistic expansion tempo. In all the Telecommunications Board has 180 channels at its disposal for the entire country.

6578
CSO: 5500/2045

FIRST LOCAL-RADIO STATION BEGINS TEST BROADCASTING

Oslo AFTENPOSTEN in Norwegian 16 Nov 81 p 14

[Article by Terje Avner]

[Text] Risor, 15 Nov--Introduced with the strains of the "Typewriter Symphony" the historic first local radio for the towns of Risor and Gjerstad went on the air Saturday. And such broadcasts can become the norm both in Risor and in other towns across the country within a short time if the political authorities give the green light. It was the Sorland transmission that gave AUST AGDER BLAD a chance with a 5-minute interval in its broadcasting Saturday.

AUST AGDER BLAD was the first local newspaper to request permission from the Cultural Affairs Ministry to operate a local radio. Perhaps somewhat surprisingly for a Labor Party paper.

"Well, let's make it clear that in principle we don't see it as our goal to destroy the NRK [Norwegian State Radio] monopoly altogether. But if the authorities plan such a development it is important not to get left behind," editor Oddvar Mykland of AUST AGDER BLAD told AFTENPOSTEN.

AUST AGDER BLAD--the printed version--falls through the mailboxes of 3800 subscribers each Tuesday, Thursday and Saturday. Perhaps a local radio produced by the newspaper staff would go on the air Monday, Wednesday and Friday....

Two men on the AUST AGDER BLAD staff, Steinar Johnsen and Rolf Pihlstrom, went to the Sorland transmission studio in Kristiansand on Friday to tape their contribution to local radio. They had chosen to stick to the quite local level. These were some of the news items:

"Employees of the towns of Risor and Gjerstad who took part in the municipal employees' strike will have their wages docked."

"An exciting election for chairman is shaping up in Risor."

"Risor Savings Bank is moving toward the planned merger in Sorland."

"But a local radio is not just news," said the people behind the historic broadcast Saturday. Announcements of events and gatherings should be included too.

For example: "Members of the Risor Soccer Club will be doing volunteer work on Saturday."

"The health team invites you to a social evening at the Gjerstad Home."

"Retired Iron and Metal Union workers will meet Sunday at the Cinderella."

And as if that were not local enough:

"A wedding will be celebrated Sunday between...."

Congratulations flowed in to the editorial staff in Risor after the broadcast on Saturday. That was proof enough for the newspaper staff that local radio would be popular.

"This gave us a first taste even though we were nervous about our microphone debut. And it didn't make things easier to have the cameras for NRK's 'Review of the Day' pointing their lenses at us," said journalists Steinar Johnsen and Rolf Pihlstrom.

"It is important for an autonomous newspaper like AUST AGDER BLAD to take part in the media development that is happening in local society. That is why we were quick to make our local radio application. Having only commercial market interests behind such radio broadcasting would quickly create problems for small newspapers," said editor Oddvar Mykland.

6578
CSO: 5500/2045

END

JPRS 79740

24 December 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 194

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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24 December 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 194

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BRIEFS

ISRAEL TELECOMMUNICATIONS COOPERATION WITH CANADA--Israel and Canada will cooperate in the field of telecommunications. Communications Minister Mordekhay Tzipori visited Canada recently and agreed with the minister of communications there on cooperation in science and everything connected with communications methods and equipment. Canada will grant Israel preferential terms for loans for purchases Israel will make in Canada. [TA071724 Jerusalem Domestic Service in Hebrew 1700 GMT 7 Dec 81]

CSO: 5500/2062

BRIEFS

BANGLADESH, NEPAL SIGN MEMO--Dacca, 3 Dec (AFP)--Bangladesh and the Himalayan Kingdom of Nepal concluded here today a memorandum of understanding providing for the installation of an ultra high frequency (UHF) radio link connecting the two countries. Official BSS News Agency said the proposed UHF radio link was being set up as a part of an Asian telecommunication network to provide direct and reliable telecommunication services between the capitals of the two neighbours to facilitate promotion of trade, commerce and sociocultural contacts. Bangladesh will donate to Nepal the necessary equipment and will provide technical services for the installation and commissioning of the link and the Nepalese side will bear all the local expenses, the agency said. Mr A.M. Ahsanullah, secretary of the Ministry of Post, Telegraph and Telephone and Nepalese Ambassador in Dacca Mr Gahendra Bahadur Rajbhandar signed the documents for their respective governments. [Text] [BK031509 Hong Kong AFP in English 1429 GMT 3 Dec 81]

CSO: 5500/2062

HUGE SILICON CHIP COMPLEX TO BE BUILT IN SOUTH

Melbourne THE AGE in English 6 Oct 81 p 40

[Article by Don Maddocks]

[Text]

South Australia is to spend $4 million to establish Australia's first "silicon valley."

The local equivalent, Technology Park, Adelaide, was officially launched on Friday by the State's Minister for Industrial Affairs, Mr Dean Brown.

Mr Brown said the 85-hectare park to be styled on Silicon Valley in the US, which spawned the silicon chip industry, would attract high technology to SA, and create more jobs.

"The park represents an important part of this Government's drive to rejuvenate and expand the manufacturing industry of this State," Mr Brown said.

The South Australian Government is determined to make sure that our industry responds to these challenges, and that our industrial base and employment expands," he said.

Over the next two years the 85-hectare site, just north of Adelaide, will be landscaped and marketed in a bid to attract science-based industry.

"Starting today, the park can be marketed officially," Mr Brown said. Building on site is unlikely to start before 18 months.

"The type of industries we want to attract to Technology Park are those dealing with electronics, bio-technology, pharmaceutical production, physics, computer software, micro-processors, safety in engineering. . . the list is vast."

The $4 million, to be spent by the State Government over the next two years, will cover the purchase price of the land, plus extensive landscaping.

"Apart from broadening the manufacturing base of SA, science-based industry has the potential to create many new jobs and industries," Mr Brown said.

"This has been clearly shown in the United States."

Mr Brown told academics and businessmen at the opening that SA had started negotiations with a number of companies, including some multinationals, which had shown interest in setting up at the park.

He said it was important that SA attract high technology industries because they are labor intensive.

"A survey of large, conventional companies in the US shows that over the last five years their sales increased by 72 per cent, but employment in those firms grew by only 3.2 per cent.

"In contrast, over the same period, companies using high technology increased their sales by 488 per cent, and employment in those firms jumped by a staggering 450 per cent,' he explained. plained.

In America alone, there are more than 80 similar parks, each with a nucleus of about 25 companies.

Technology Park, Adelaide, has been sited next to the South Australian Institute of Technology at The Levels,

"This was a deliberate decision," Mr Brown explained. "It will enable a close liaison to develop between industry and the institute to the benefit of both.

"It will also allow access to a wide range of research, developing and testing facilities, which can be used as the demand arises."

He said the institute would also offer tenants of the new park access to its Cyber 173 computing system.

"The terms are still to be agreed upon. But a letter of agreement on the use of these facilities has been signed."

The Minister pointed out that SA was already a prominent scientific centre.

The 2690-strong Defence Research Centre was only 10 minutes away, plus Adelaide has a large CSIRO operation covering applied physics, computing research, and a wide range of other fields.

"We also have the Waite Agricultural Research Institute, Roseworth Agricultural College and Amdel," he added.

The implementation and operation of Technology Park, Adelaide, will be the responsibility of a statutory corporation responsible to the Minister.

The park would have three distinct areas:

A research, development and testing section. Another, where high technology products are brought to a production stage. And a third to specialise in mining research, natural resource and energy projects.

The concept of technology parks originated in the US in the late fifties, and has grown rapidly.

Silicon Valley itself is a technology park attached to Standford University, San Francisco. Its success, and others, has prompted similar facilities in Canada and the UK.

CSO: 5500/7509

CONTRACTS LET, DETAILS GIVEN ON UNDERSEA CABLE TO CANADA

Sydney THE SYDNEY MORNING HERALD in English 6 Oct 81 p 20

[Text]

A $400 million, 15,000 kilometre-long submarine telephone cable system, the ANZCAN, is expected to become fully operational by the end of 1984.

The ambitious ANZCAN will eventually link Sydney, through the Norfolk Island, Fiji and Hawaii, with Vancouver, and will carry most types of telecommunications traffic, including telex, telephone, fascimile and computer-based data.

Considered to be the most ambitious international telecommunications project so far undertaken, ANZCAN will also be extensively used by other Pacific Rim countries and will cater for Australia's growing demand for international telecommunications links, currently growing at an annual rate of about 30 per cent.

Australia's commitment to the ANZCAN project is considerable.

The Overseas Telecommunications Commission (OTC) is the major partner in the project, with a capital investment of about $200 million.

Two large multi-national companies will manufacture and lay the cable system, which will be capable of handling more than 1,3000 simultaneous telephone calls or about 16 times the capability of the existing system, the COMPAC.

Standard Telephones and Cables of the UK has won a $300 million contract to supply and install the cable segments between Sydney and Vancouver, while the Japanese Nippon Electric Co will manufacture and lay a 1,370 km segment of cable to link Norfolk Island with New Zealand.

In announcing the contracts, the Federal Minister for Communications, Mr Sinclair, said that each of the successful tenderers has included significant Australian involvement in their contracts.

STC, Mr Sinclair said, will convert a factory in Liverpool, near Sydney, to construct "repeaters" for the cable system, which are required at intervals of about 13 kilometres along the cable to boost communications signals.

CSO: 5500/7509

GOVERNMENT SAID TO SUPPRESS CONTROVERSIAL TELECOM REPORT

Canberra THE AUSTRALIAN in English 13 Oct 81 p 3

[Article by Ted Knez]

[Text]

A FIGHT between Telecom and the Federal Government worsened yesterday over the alleged suppression of a controversial report, completed more than a year ago and conflicting with the Government's policy on more private involvement in Telecom.

The Senate Opposition Leader, Senator Button, yesterday accused the Government of suppressing the report, which was jointly commissioned with Telecom.

And senior Telecom officials said there was "no reason why the report has been left dormant for so long".

The Government has waged a continuing campaign against Telecom since its union pay deal fiasco early this year, and recently announced a major inquiry.

The senior Telecom officials said the report, by the international consultancy firm McKinsey and Co, examined Telecom's continuing capital needs.

Senator Button yesterday released extracts from the report which found:

- Telecom should be allowed to increase capital expenditure by an extra $75 million or 8 per cent in real terms by 1990, pointing out this was a very modest increase.
- The extent to which new services were provided by Telecom would be determined by the amount of spending it was permitted.
- Improved productivity would be more likely with greater freedom of Telecom to increase its spending.
- The lowest increase in productivity would result from holding down of Telecom's expenditure.

Telecom has a planned capital works program this financial year amounting to $1265 million, compared with $1180 million last year.

However, the Government's hard-line on public sector borrowing has meant that Telecom will have to finance most of its programs from revenue — one reason for its recent rate increases.

Senior Government officials claimed yesterday that Telecom would have to pay out an additional $52 million in wages following its technicians' pay deal.

The senior Telecom officials pointed out that the report was available to the commission shortly after the end of the 1979-80 financial year.

Senator Button accused the Government of keeping the report secret for 15 months because it showed how Government policies were harming Telecom.

Senator Button, addressing the Australian Telecommunications Employees Association conference in Sydney, claimed Telecom and Australia Post were being "stalked and impeded by a hostile Government".

CSO: 5500/7509

PLANS FOR TELEVISION TOWER IN DELHI TOLD

Calcutta THE STATESMAN in English 14 Nov 81 p 9

[Text]

NEW DELHI, Nov. 13.—A year and a half from now, Delhi will have a new landmark: a TV tower which will be twice the height of the Qutab Minar and cost Rs 2.61 crores.

The 263-metre-high tower, to be constructed on a four-acre site near Model Town on Karnal Road, will have a viewing gallery and a revolving restaurant at a height of 160 metres.

It is estimated that on an average about 300 people will visit the viewing gallery everyday. The revenue on this account above is expected to be between Rs 1 and 2 lakhs.

Both the viewing gallery and the revolving restaurant are expected to be closed on all sides to prevent people from attempting suicide from there—a reason for the restrictions at Qutab Minar.

The first 162 metres of the tower will be in reinforced concrete and the remaining 73 metres in steel for the TV antenna. At the top of the concrete portion, a revolving restaurant and a viewing gallery are to be constructed, each designed to accommodate 150 people at two levels. Two fast moving lifts will take the tourists to the viewing gallery. In addition, there will be facilities for tourists at the base of the tower.

The new tower is part of a Rs 10 crore scheme for the expansion of Delhi Doordarshan which will involve building a new complex at Mandi House and extending TV coverage to more areas. It will have two transmitters of 10 KW each which will help reduce breakdowns.

With the installation of the new transmitter, the range of Delhi TV will extend from 68 km to 95 km and provide services to 12,900,000 people compared with 9,300,000 now. The number of people covered in rural areas will increase from 2,550,000 to 6,000,000 people.

As part of the expansion of TV services under the Fourth Plan, a scheme to set up a 2×10 KW tower was prepared. Originally, a site covering 3.5 acres on the northern ridge behind Hindu Rao Hospital was selected and the Delhi Administration was requested to allot the land. The then Lieutenant-Governor of Delhi, however, did not approve of the proposal on the ground that the installation of the tower would "violate the sanctity of the ridge" which was the only "lung" of he city. Two more sites —one in Sona and the other in Rohtak were examined, but were not found to be suitable.

CSO: 5500/7039

BRIEFS

INDIA-UAE PHONE LINK--Abu Dhabi, Nov 9 (UNI)--International direct telephone dialing for subscribers is soon to be introduced between India and the United Arab Emirates (UAE), it was officially indicated here yesterday. Discussions in this regard continued for the second day yesterday between the Indian delegation led by Additional Secretary Thomas Kora of the Ministry of Communications and the Emirates Telecommunications (EMIRTEL) authorities. The two sides were working out the nodalities of the communication link required, possibly a submarine cable from Bombay to Dubai or Abu Dhabi. [Text] [New Delhi PATRIOT in English 10 Nov 81 p 3]

CSO: 5500/7040

WHITE PAPER ON COMMUNICATIONS ISSUED

OW270349 Tokyo KYODO in English 0327 GMT 27 Nov 81

[Text] Tokyo Nov 27 KYODO--This year's white paper on communications proposed Friday to introduce communications satellite technology into anti-disaster measures in an emergency.

Posts and Telecommunications Minister Ichiro Yamanouchi presented the report on communications for fiscal 1981 before a cabinet meeting Friday and the report was approved.

The annual report also proposed to study connecting communication networks of the National Land Agency, the Construction Ministry and the Fire Defense Agency to make them useful in the event of an emergency.

The report on the main theme "Disaster and Communications" described communication media in recent years as "the central nerve in the society" which has permeated through social and family life as well as business activities.

The report mentioned countermeasures against disasters by means of various communication media such as data communications, telephone, television and radio, in view of their respective characteristics.

In the case of international communications, the ministry plans to set up central stations in Tokyo and Osaka to divide operating functions and to build a central station in Oyama, Tochigi Prefecture, northeast of Tokyo, to start operation in 1985, the report said.

The ministry is also doubling communication transmission routes from the present single route for both international and domestic communications, it said.

It also said a system to regulate general telephone service has been developed for smooth telephone communications for rescue and restoration activities in an emergency.

The Japan Broadcasting Corporation (NHK) and other broadcasting stations have proceeded with disposition of mobile broadcasting installations and the police now have a nationwide shortwave communication network as well as their own communication circuits.

The Japan National Railways (JNR) also introduced a shortwave wireless circuit and has been going toward making the circuit microwave in line with electrification of railways, the report said.

The ministry is also developing an "urgent broadcast system" in which televisions and radios are automatically switched on to give people forecasts and warnings against emergency.

Private corporations are going on doubling computer circuits from the present single circuit and decentralizing date files against a computer accident.

The report also added mails totaled 15.7 billion letters in fiscal 1980, up 3.1 percent over the previous year, subscribed telephones about 39 million, up 3.4 percent, and subscribed television viewers 29.2 million, up 1.1 percent.

CSO: 4120/71

CABINET DEFERS DECISION ON INTRODUCING VIEWDATA SYSTEM

Auckland NEW ZEALAND HERALD in English 22 Oct 81 p 3

[Text]

A decision on the introduction of Viewdata has been deferred by the cabinet for three months.

This was confirmed last night by the Minister of Broadcasting, Mr Cooper, who said the Government wanted more time to consider the introduction of the electronic information-retrieval system.

Two private companies are vying for the right to introduce the system. The post office is also anxious to have some involvement.

Mr Cooper said in view of what was happening in Britain, France, West Germany, Canada and the United States, there were still developments in the evolution of Videotex or Viewdata systems.

Vast Investment

A three-month wait would be helpful in that further work could be done on the introduction of "non-vocal traffic through the telephone," he said.

"All these new communication-transmission systems, which are new-generation technology, are taking some time to sort out.

"There has been a vast investment overseas in this technology which at this point is not realising a lot of profit for the companies involved," said Mr Cooper.

New Zealand could take advantage of these developments, and there was time for further evaluation.

New Technology

"I know there is some anxiety in the private sector and that there are a couple of firms that are keen to introduce it," said Mr Cooper.

However, the Government wanted to make certain New Zealand got the best available new technology.

Mr Cooper said that in Britain the system was operated by the public sector.

"But my tendency is to feel that the private sector should be involved in the development with the Post Office being the common carrier," he said.

In this way the private companies which would be involved in supplying the communication systems and their potential clients could continue to plan their introduction.

He said they could make submissions to the Government if they had any new material on the systems.

The two companies wanting to introduce the systems are Viewdata Information Retrieval Ltd, a consortium of newspaper and computer interests, and Fourth Estate Holdings Ltd.

In Australia, the Government has decided not to permit its own agency, Telecom, to introduce the viewdata system.

Enormous Challenge

Through the involvement of the private sector in such development, the Government was seeking to extend the capital investment that was possible through its statutory authorities, Telecom and the Overseas Telecommunications Commission, according to the Minister for Communications, Mr Sinclair.

The Government's decision meant that Telecom would not be the main contractor for the introduction of viewdata.

"The decision gives an enormous challenge to the private sector," Mr Sinclair said.

Local-call Access

"It will need to prove that it can provide adequately for the needs of the Australian community in such areas through its investment in the computerised knowledge-storage facilities which viewdata represents, as well as using Telecom's Australia-wide telephone network."

The Telecom proposal had involved local-call access to the proposed viewdata from anywhere in Australia, and also access, at a charge to be determined, to the computerised data available through British Telecom's Prestel service.

Mr Sinclair said that through South Pacific countries' links with Australia it could be possible for them to tie in with such systems at a later date.

CSO: 5500/9018

EXPANDED EXCHANGE FACILITIES IN PAKISTAN

Karachi BUSINESS RECORDER in English 29 Nov 81 p 3

[Text]

The International Gateway Exchange will have 48 more circuits connecting Saudi Arabia, UAE and USA after the expansion of capacity of the satellite earth station in March 1982.

This was stated by Mian Munawaruddin, Director General Telephone and Telegraph, at a press conference in Karachi yesterday.

Inaugurated in July 1980, the exchange has a capacity of 300 international circuits and at present 19 countries were connected with a total of 198 circuits.

He said that the facility of international subscribers dialling service was available to the subscribers of 25 exchanges throughout Pakistan—each exchange having a capacity of 1,000 ISD subscribers.

He, however, agreed that the response from subscribers for conversion of their telephones on ISD system was not much encouraging, perhaps because of the fear of excessive billing.

Giving figures, he said, in Islamabad exchange I there were 45 ISD subscribers, Islamabad II (22) and Islamabad IV, (20). Karachi airport (3), Cantonment (161), Central (192), Clifton (206), CTX (71), Defence (155), Nazimabad (57), Pak Capital (186), PECHS (255), Queens Road (68), SITE (39) and West Wharf (56), Lahore Cantt. (13), Central II (33), Central IV (41), Egerton Road (52) Garden Town (48), Gulberg (55) and Samanabad (40), Peshawar Central (12), Quetta Central (30) and Rawalpindi (27). Faisalabad was being commissioned shortly, he added.

The Director General T and T said that in view of complaints about non-attention from 0102 and 0104 the booking, enquiry and domestic circuits were being increased for which an order had been placed on the manufacturers. The work will be completed next year.

He said that plans for further expansion of the gateway exchange were also under consideration.

He said that since the introduction of the gateway exchange the overseas outward and inward traffic has increased manifold. The outward traffic in June 1980 with manual service was only 23,111 calls per month with a corresponding inward traffic of 30,766 calls. In October 1981, the outward traffic was 78,807 calls and inward traffic was 2,99,258 calls. About 4,000 calls were booked daily and 70 per cent of these were normally completed.

He said during morning hours an analysis of delay revealed that 36 per cent calls were tried within 15 minutes of booking time, 52 per cent were tried within 30 minutes, 71 per cent within an hour and 92 per cent within three hours.

He said that Telegraph and Telephone services were also provided to the ships on high seas and on Karachi waters. In October, 1981, 776 calls were handled on VHF system and 165 calls were routed through radio link. In the same month, about 1,090 telegrams were received and 241 sent to ships.

60,000 MORE LINES

Munawaruddin said theh Government has approved a project for providing 60,000 additional telephone lines during the next 3 years at an estimated cost of Rs. 120 crore.

He said that in the entire network of the telephone system the number of existing telephones stood at about 3.5 lakh whereas as many number of applications for new telephone connections were pending with the department.

He, however, said that the density of telephone in Pakistan was much higher than the neighbouring India. In Pakistan telephones were .02 per cent per 100 people.

He said that in Karachi telephone facility was being provided to 94,500 subscribers through 21 exchanges with an equipped capacity of 1,17,400 lines. The capacity will be increased to 1,39,100 by June 1982 with the addition of six new exchanges.

The six new exchanges to be commissioned by June 1982 are: Nazimabad-II (10,000 lines), New Exchange by March 1982, Keamari (1,200 lines) New exchange by June 1982, Cantonment-II (6,000 lines), Defence Society (2,000), Malir (1,000) and New Karachi (1,500 lines).

He said that building for Keamari exchange had been completed. Another exchange building was constructed near the existing exchange at Sabzi Mandi while construction of a new Lea Market exchange building and expansion of PECHS exchange will be started shortly.

He said that in Karachi alone, the pending demand for telephone connections was about 1.20 lakh. Each connection costs over Rs. 20,000 to the government in the shape of capital cost of building, air-conditioning, power system, exchange equipment, local network, and long distance domestic and international transmission system.

He said that in Karachi, the number of telephone service complaints was 1,600 to 1,700 per day. The situation will improve further with the replacement of 8,000 old lines of central exchange by June 1982.

The telephone service revenue of Karachi was about Rs. 55 million per month and only 1,000 complaints about excessive billing were received every month.

AUTOMATIC EXCHANGES

The General Manager Karachi Telecommunication Region, Ajmal Khan, who was also present at the press conference said to a query that out of every 12 cases per thousand per month, every four complaints were decided in favour of a complainant. He said that about 30 per cent cases were disposed of at the divisional engineer level.

Referring to the situation in southern tele-communication region, Mian Munawaruddin said that in Sind province, excluding Karachi metropolitan area, there were 30 automatic exchanges with a capacity of 27,700 lines and 191 manual exchanges with 10,329 lines. The working telephone connections were 25,932 earning a revenue of Rs. 10 million per month.

He said that this year 2000 new conections were expicted to be opened in the province. Besides he said 265 PCOs were working in remotely located areas in addition to 157 departmental PCOs and 54 through agents.

Meanwhile, about 150 public call offices in the City were being issued notices for their closure following complaints of malpractices against them.

Later, the Director-General Telegraph and Telephone, Mian Munawaruddin, visited Hub, Gadani, Sonmiani and Uthal areas to apprise himself of the availability of telecommunication facilities there.

He was accompanied by the General Managers southern and overseas telecommunication regions, Director Development and Divisional Engineer, Telegraph.

Mian Munawaruddin called for acquiring a piece of land for the telephone exchange and telegraph office at Hub Chowki He directed General Manager, western telecommunication region Quetta that opening of a telegraph office in Lasbela district be expedited.

He was informed that 10,000 sq. meter of land at Hub Chowki had been allotted by the provincial authorities.

He was further informed that UHF trunk line was being provided to link Hub Chowki with Karachi through a rural automatic exchange.

At present Uthal is provided with tele-communication facilities through an open wire trunk line. An 100 line automatic exchange was working here with NWD facilities. The service will be improved with the commissioning of the 200 line EMD exchange and UHF trunk line.—APP.

CSO: 5500/4519

BRIEFS

JILIN MICROWAVE LINE PROJECT PROGRESSES--At the request of television viewers, a JILIN RIBAO reporter visited the Provincial Post and Telecommunications Administrative Bureau and the Provincial Broadcasting Bureau. Responsible comrades and personnel at these two bureaus discussed construction of the microwave line installation project and television program reception. The function of this microwave line is to relay the programs of the central television station. Construction began this April. Because this microwave line is long, the installation work is arduous and many new problems have cropped up, this project will take a long time to complete. The installation of the microwave line, which links four provinces and one municipality, is contracted by the Second Engineering Company under the Post and Telecommunications Ministry. The installation work on main parts of this microwave line has been virtually completed. Many special targets have been fulfilled. To enable television viewers to receive better reception of the central television station, the workers are trying to wrap up their tasks as soon as possible. It is estimated that this project will be completed by the end of December and will be put into operation on 1 January 1982. [Text] [SK080930 Changchun Jilin Provincial Service in Mandarin 1100 GMT 6 Dec 81]

CSO: 5500/2062

BRIEFS

'VNA,' 'BTA' INFORMATION EXCHANGE--Hanoi December 5 (VNA)--A new agreement on professional cooperation and exchange of information was signed between the Vietnamese News Agency V.N.A. and the Bulgarian News Agency B.T.A. in Prague on Thursday. Signatories were V.N.A. director-general Dao Tung and B.T.A. director-general (B. Traikov), who were attending a conference of heads of socialist news agency in the Czechoslovak capital. B.T.A. also signed cooperation agreements with the Lao News Agency K.P.L. and the Kampuchean News Agency S.P.K. [Text] [OW051815 Hanoi VNA in English 1500 GMT 5 Dec 81]

SRV, CUBA MEDIA COOPERATION--Hanoi November 26 (VNA)--Vietnam and Cuba signed an agreement on radio and television cooperation in Havana on Tuesday. The agreement, valid for 1982-1984, provides for the exchange of films, tapes, information and experience. [Text] [OW291325 Hanoi VNA in English 1451 GMT 26 Nov 81]

CSO: 5500/4520

GROWTH, MODERNIZATION OF TELEPHONE SYSTEM VIEWED

Santiago EL MERCURIO in Spanish 15 Nov 81 p B1

[Text] The Chilean Telephone Company is currently going through a process of growth and modernization.

During the 1980 fiscal year, as part of the Chilean Telephone Company Development Plan for the 1977-1983 Period, significant progress was made in each of the project included in the program, which represents a total investment for the period on the order of $340.8 million.

New Facilities

A total of 21,185 lines were installed and put into service in different areas of the national territory for the 1980 program in compliance with the plan for 1977-1983. Work included the startup of the first electronic centrals controlled by memory bank programs (utilizing computers and microprocessors), which, thanks to their advanced technology, provide extra facilities for subscribers in addition to incorporating the functions of providing rates and direct long-distance dialing. As a continuation of this program, the process of installing another 12,800 lines was begun in 1981.

It is hoped that by the end of 1983, 177,656 lines will be installed at a total cost of $227 million.

Local Service

The work in question was completed in 1980 and the system went into operation on 1 April of this year in Santiago, Valparaiso and Concepcion, after government technical and economic officials approved the rate schedule presented by the company, although with modifications.

Reliability of Service

A series of projects related to the minimum equipment needed by the company's central systems in order to ensure the continuity and reliability of service was completed in 1980 and 1981. Some equipment was replaced and 15 localities were incorporated into the telephone system through the single-channel VHF system.

In addition, two-directional direct long-distance dialing was put into operation in Santiago, Valparaiso, Concepcion, Antofagasta, La Serena and Coquimbo and single-directional service in the cities of Calama, Malipilla, Rancagua, Temuco, Talca, San Antonio, Chillan, Los Angeles and Copiapo.

The plans of the Telephone Company are to have direct dialing throughout the nation during the first half of 1982.

Significant Progress

As a result of studies completed in 1980 by the Telephone Company and given the demand for lines that exists in the country, a line installation program was approved for this year, based on the utilization of available space in existing centrals and stock on hand.

This program includes 6,500 automatic lines and 2,250 manual lines, which, together with the 12,800 lines begun last year, make a total of 21,550 lines for this year.

An important step was taken with the contract made with the French company Thompson CSF [General Radio Company], for the supplying and installation of 153,500 lines in digital electronic technology using memory computers and links to interconnect the centrals between themselves and with the existing system.

Development

Despite the growth in telephone lines, there is still a shortage in the country of some 180,000 requests for connections by the people. The plans of the Chilean Telephone Company are aimed at reducing that number between now and 1983.

The following table of statistics shows the development of telephones in Chile on 31 December 1980.

Statistics for Telephone Development in Chile (on 31 December 1980)

Regions	Lines in Service	Phones in Service	% of Total	Percent Automatic	Phones per 100 inhab.	Population
Tarapacá	8.025	12.658	2.22	98,39	5,23	242.139
Antofagasta	6.763	10.905	1,92	89,73	3,46	315.440
Atacama	2.512	3.630	0,63	90,46	1,81	200.642
Coquimbo	6.087	9.141	1,60	72,12	2,18	419.297
Valparaíso	43.034	64.929	11,41	78,33	5,23	1.241.628
Metropolitana	241.457	364.725	64,09	98,24	8,46	4.313.510
Lib. Bernardo O'Higgins	8.007	11.837	2,08	63,12	2,07	570.512
Maule	9.100	13.890	2,44	47,12	1,95	710.516
Biobío	22.367	37.218	6,54	86,22	2,51	1.483.734
Araucanía	7.820	12.725	2,24	66,18	1,93	659.442
Los Lagos (1)	12.308	16 720	2,94	93,79	1,93	868.303
Aisén-G. Carlos Ibáñez (2)	1.910	2.278	0,40	92,71	3,56	64.062
Magallanes	5.195	8.466	1,49	93,10	7,73	109.564
TOTAL C. T. C.	360.367	550.124	96,66	91,56	5,36	10.266.424
TOTAL CHILE	374.585	569.122	100,00	91,64	5,08	11.198.789

1) National Telephone Company
2) Coihaique Telephone

11,464
CSO: 5500

BRIEFS

EARTH SATELLITE STATION HAS DATA COLLECTION--Peru will soon have its own earth satellite station which will receive information gathered by satellites so as to make an overall study of Peru's (?development) potential on the basis of photographs sent from outer space, according to (Walter Blanco), chairman of the committee which is organizing the first national seminar on remote reception. Remote reception is a special technique through which signals are sent out by satellites engaged in teleobservation and these signals are then converted into photographs. The earth station will be built in Chorrillo, Morro Solar, and its cost will be $10 million, which will be supplied by Canada. This facility will enable the country to have a thorough knowledge of its topography. [Text] [PY260139 Lima Domestic Service in Spanish 1200 GMT 25 Nov 81]

CSO: 5500/2062

BRIEFS

NEW RADIO TRANSMITTER--According to a central news unit report, a radio transmitter named after martyr Hashemi-Nezhad, situated 25 km west of Mashhad, was inaugurated this morning by Managing Director of the Voice and Vision of the Islamic Republic, Mohammad Hashemi. The Hashemi-Nezhad central transmitter is comprised of four transmitters, three 100-kw and one 50-kw transmitters, and covers most cities in the Khorasan Province. One of the powerful antennae of this transmitter, being one of the tallest in the country, is 254 meters. [LD040325 Tehran Domestic Service in Persian 1630 GMT 3 Dec 81]

CSO: 5500/2062

ARAB SEMINAR DISCUSSES SATELLITE TRANSMISSION

GF121654 Doha QNA in Arabic 1940 GMT 10 Dec 81

[Text] Riyadh, 10 Dec (QNA)--The seminar on the use of communications satellites for radio and television currently being held in Riyadh has decided to reestablish the Television and Radio Coordination Committee. Regional organizations participating in the committee include the Arab countries' Radio Union, the Arab Establishment for Space Communications, and the Arab Organization for Education, Science and Culture. The secretariat of the Arab Broadcasting Union will also act as secretary of this committee.

This was announced by 'Abd al-Rahman al-Mu'dadi, the director of Qatari Radio and head of the Qatari Radio delegation, to the QNA correspondent in Riyadh today. He said the seminar had completed the objectives of the work plan for the 1980's to use the best satellites for radio and television services. This involved the need to take into consideration--while planning nontechnical aspects--various guidelines such as putting forward the objectives of the plan to encourage exchange and joint production operations between two or more sides. The interest in space must not reduce support for and use of ground networks for television and radio communications. The call for a free flow of news and information on an equal basis among various regions of the world must begin first within the Arab framework in such a way that special care is given to news exchange.

He also said that the seminar called for extending radio and television services to regions that are deprived of them. The seminar also held the view that television should not be the only beneficiary of the space network but that it is necessary to plan to make use of the space network in radio broadcasting as well.

He said the seminar also discussed hostile ideological penetration being directed against the developing countries by the superpowers' information media. It also discussed how much space communications, particularly satellites for direct radio broadcasts, will contribute to the strengthening of cultural domination by the superpowers and to the dangers of this ideological invasion. The seminar decided that it is important to establish advanced communications industries in the Arab homeland, particularly in the field of equipping the ground stations of the Arab space network.

The Qatari Radio director said the seminar affirmed the need for preparing the manpower necessary to produce high-standard technical programs that can be

transmitted via the Arab network. It also stressed the importance of close attention to the studies of the digital video transmission [al-irsal ar-raqami as-suwari] that carries information serving the various media. This is a new service that is necessary for television, ground and space networks. He pointed out that the seminar defined various fields included in planning for utilizing the space network. These fields are joint production--by two or more parties--of television programs, educational programs for schools, adult education programs, development programs, news exchange in the Arab region and broadcasting studies to define the requirements of, reactions to and special studies for the possible use of earth relay connections for the programs.

The planning also included rules regarding the distribution of expenses for production, exploitation, and the use of the earth and space relays, provided that care is given to moral, professional and technical matters in the production, outlining special rules to protect the literary and artistic properties of what will be broadcast through the Arab network, and proposing the kind of tariff to be levied on the transmission of news on the basis of which negotiations can be held with the parties concerned.

The seminar, in which Arab and foreign delegations are participating, is scheduled to hold its final session this evening, concluding 4 days of meetings.

CSO: 5500/2062

COMMONWEALTH OFFICIAL CAUTIONS AGAINST ESTABLISHING TV STATION

Talks With CBA

Gaborone DAILY NEWS in English 5 Nov 81 p 1

[Text] BOTSWANA has been cautioned against rushing into the setting up of a television system and further advised not to be "unusually perturbed" about the availability of a television signal from South Africa because "there is nothing that can be done about it."

The Secretary-General of the Commonwealth Broadcasting Association (CBA), Mr Alva Clarke on Monday made this statement and further said that not only is a television system expensive but it was also a political matter, desiring a political decision.

"A Minister of Information for example, arguing in Cabinet for a new transmitter against his other ministerial colleagues putting the case for a new school is up against the logic of priorities," said Mr Clarke.

He was speaking at the official opening of the fifth meeting of the East, Central and Southern African group of the Association.

Mr Clarke said about a television system: "What is to be said for the introduction of domestic television services in Botswana... where financial resources are limited and we are talking about an expensive system! I do not believe that we ought to argue here only about the expense of the system. It must be borne in mind that the question of introducing a system is not a matter for broadcasters only."

"It is indeed a political matter and a political decision. Our case would be much more effective if we argued that there can be no really effective system until we took into account that the best possible system is one that is run by the national of the country and therefore before any move is made a long term training programme has to be worked out for all the essential disciplines in television broadcasting."

Mr Clarke said in this respect people should consider that they would be thinking in terms of a five to seven year period, since it was well known that as a powerful medium it was essential to work out properly and methodically how best the system could work."

On the issue of a television signal to Botswana, Mr Clarke said "I would quite deliberately plead with my colleagues from Botswana not to be unusually perturbed about the development of television across the border which is available in Botswana, for the simple reason that there is nothing that can be done about it and as broadcasters we have to be realistic."

He added: "It is something over which you have no control and one day when Botswana is able in the normal manner of good planning, to realise its own service, that is a service planned by Botswana with the people of Botswana trained to run it, you will find that the great attraction will inevitably be the local programmes since in effect will be mirroring the country to itself."

The CBA conference will run until Friday afternoon when delegates will start leaving for their countries.

Effect on Programs

Gaborone DAILY NEWS in English 6 Nov 81 p 2

[Editorial]

[Text]

DURING this past week, Botswana has been holding talks with other Commonwealth states and making decisions that are bound to have far reaching implications on National Development Programmes.

The talks were the fifth meeting of the East, Central and Southern African grouping of the Commonwealth Broadcasting Association (CBA).

This forum, in effect brought together the people who are expected to decide the most effective methods of interpreting government development programmes to the people and at the same time, reflect and interprete the reaction of the population at large to these programmes, through the poweful medium of radio.

Thus, the CBA meeting brought together, Radio Broadcasters at the decision - making levels and their representatives from some eleven Commonwealth countries: Botswana, Malawi, Zimbabwe, Lesotho, Swaziland, Zambia, Tanzania, Kenya and the Seychelles.

What we wish to emphasise here, is that such conferences are not just mere talking shops. But they actually formulate methods of interpreting the messages that are so necessary for solving problems affecting national developments.

What is also evident here, all of the Commonwealth countries that were represented at the Gaborone Conference, share much the same problems and goals.

In particular, all the broadcasting sections of these countries are geared towards promoting the national effort of ensuring the elimination of ignorance, hunger, poverty and disease, from the midsts of their peoples and communities.

It is therefore natural that through such conferences as the CBA, for extensive co-operation and proposals for assistance between the countries represented here, should be given greater emphasis.

In Botswana, for example, our Broadcasting Service continues to face serious shortcomings and constraints. Among other things, shortage of suitably qualified and experienced personnel and partial coverage of our vast country have been continue to be our major problems. We can only overcome such problems by explaining them at such forum and gleaning clues to solutions from the success of others in the season.

We are therefore gratified that in having had the privileges of hosting this important conference, we have not only talked about and sought solutions for such problems but we have also contributed although in a humble way, towards identifying areas that will help us further improve broadcasting for the welfare of our people in this region.

CSO: 5500/5643

INCREASING NUMBERS TURN TO VIEWING SOUTH AFRICAN TELEVISION

Gaborone DAILY NEWS in English 6 Nov 81 p 2

[Article by Alaudin Osman]

[Text] **MORE AND MORE people are turning to South Africa's state-owned television for entertainment in Botswana. This has triggered off a lively debate in the local media circles. ALAUDIN OSMAN reports.**

An interesting debate has been taking place within Botswana's small but lively media circle.

At the heart of the debate is the old question of television and its effects on society. What makes this particular debate interesting, however, is that the television service and programmes in question, are beamed from South Africa - a country whose policies of apartheid are found repugnant and condemned by Botswana and other independent nations.

The debate has been gaining momentum from a sudden explosion of the television set population. This has caused a mushrooming of companies offering TV sets and video at competitive prices. In turn, there has been a sudden birth of fringe companies offering services that range from TV installations, maintenance and repairs, to lease-hire agreements on video machines, casettes and TV sets.

The result is Gaborone's skyline is now dotted with all makes of TV aerials. Most homes boast a set. And in most places of public leisure such as hotels, colour television sets are becoming as common as the bar fittings.

What all this implies, it that more people, especially in the urban areas, are now turning to South Africa's state-owned television for entertainment as well as information.

How do officials and the media people in Botswana view all this? "First and foremost," explains the Director of Information and Broadcasting Services, Mrs Emeldah Mathe, "there would be nothing morally wrong if the South African television service was not permeated with and geared towards promoting apartheid.

"The second point to bear in mind, is that we have no television service of our own. And our press and broadcasting services still face serious shortcomings and constraints in both manpower and technical content. So, until such time that we acquire these necessary inputs, we will have to painfully put up with a situation whereby we are surrounded by powerful and dominating media."

Canned Television

There are some who go along with this view. Equally, there are others who believe it is technically feasible to 'blot out' the South African signal and in its place, 'tap' a more acceptable signal, such as that of Zimbabwe television. There are yet others -from the business community -who believe it is a worthwhile proposition to introduce instead, 'canned' television.

Television in Botswana was begun by one enterprising individual, Mr Joachim Sarmento Costa.

Since the early 70s he and others had been trying to pick up the South African televison signal from Botswana.

In 1976, Mr Costa purchased a P2,000 transposer image from Johannesburg and beam it to a seven-kilometre radius.

There were then, only about a dozen people with TV sets in Gaborone. The signal was still weak because of the inadequacies of the battry-powered equipment. At least P6,000 worth of solar-powered equipment was needed then for an improved signal and image.

Two years later, there were at least 500 TV sets in town. Mr Costa and five other persons formed a loose 'TV Owners' Association' to drum up interest in people donating towards the purchase of the required equipment. The money was made available and transposers of one watt output were installed on Kgale hill. The signal was much improved although there were still some fade-offs being experienced.

Earlier, the installation had been held up while posts and Telecommunications officials ensured that the law was not being violated, recalls Mr Costa.

By 1980, the TV Owners' Association had swelled its membership to more than 150. The signal output in Gaborone

had been boosted up to 3 watts and the signal and image could be picked up clearly, up to a 40 kilometre distance from the booster.

Mr Costa reckons that there are at least no less than one thousand television sets operating in Gaborone. Others triple this figure. Whatever the exact figure may be the numbers are growing daily. And all operate through goodwill, the booster service that Mr Costa operates in conjuction with the TV Owners Association. Switch off that booster and there would be a TV blackout in Gaborone.

Since then, other television services were installed in other parts of Botswana, by at least one major investment company, to cater especially for its expatriate staff on contract here.

Meanwhile, the debate about the TV service, continues. One senior journalist in the Botswana Press Agency says: "I am embarassed about getting TV service from South Africa. But at the same time, I need it."

He continues: "Politically, we are being pumped with South African progaganda. And the nature of TV being what it is, it is difficult to switch off like you would with the radio, or to turn away as you may with newspapers."

He believes that the present TV service is having "disastrous effects" on Batswana children. He explains: "South African television is based on one thing -colour. The black person is hardly ever-if at all - depicted in a positive and dignified role on that TV service."

He adds: "Most of our children will want to conform to the lessons that they are getting on TV. They will begin to have a 'White' mind." This, he says, is because children do not conceive why there are no Black faces on the TV screen. "So, they may begin to believe that it is a good thing not to see a Black face on the screen. And if these kids go to the cattle post, they won't be able to relate to the herdboy, simply because herdboys are not depicted on TV."

The thread of this argument is picked up by a radio journalist who says that the effects could be equally bad on White children. "These children do not see Black children on TV. What do you think is created in the mind of the white child? It is an exclusive concept of the racial component of the society."

One other journalist describes the TV service as "an overdose" of South African propaganda which may stifle any attempts at establishing local TV.

Yet others were becoming concerned that on certain days, some people switch off Radio Botswana to watch the 6pm TV news instead. "Some people even go to the extent of saying, during the recent South African raid into Angola, that SATV covered the Anglolan raid very well."

Whether some of these arguments appear to be far-fetched or not, there is one fact they will not alter, which is that television has come to stay in Botswana. This fact is supported and was ably argued by the Secretary General of the Commonwealth Broadcasting Association, (CBA) Mr Alva Clarke at the official opening earlier this week, of the CBA's regional meeting in Gaborone.

The question of introducing a television system is not a matter for broadcasters only, he noted. "It is indeed a politcal matter and a political decision."

"Our case would be much more effective if we argued that there can be no really effective system until we took into account that the best possible system is one that is run by the nationals of the country. Therefore, before any move is made a long term training programme has to be worked out for all of the essential disciplines in television broadcasting." A five to seven year period was envisaged.

Mr Clarke explained: "The fact is that in order to realise the full potential of this medium, people have to be trained at all levels to run it properly and to be able to engage in regular domestic production. That is the essence of the argument."

He went on to warn: "If there is the feeling of providing cinema in the home, than we might as well forget the arguments, since by its nature television is a powerful medium of sight and sound to mirror the cultural and other aspects of local life to its people.

Mr Clarke advised those in the media circles here not to be unusually perturbed about the development of television across the border which is available in Botswana "for the simple reason there is nothing that can be done about it and as broadcasters we have to be realistic. It is something over which you have no control and one day when Botswana is able, in the normal manner of good planning to realise its own service, a service planned by Botswana with the people of Botswana trained to run it, you will find that the great attraction will inevitably be the local programmes since you in effect, will be mirroring the country to itself." **BOPA**

CSO: 5500/5643

BRIEFS

'PANA' MEMBERSHIP AGREEMENT SIGNED--Dakar, 3 Dec (AFP)--Cape Verde has signed the membership agreement of the Pan-African News Agency (PANA), whose headquarters is in Dakar. It therefore becomes the 15th member state of that agency. Henceforth only one more state has to sign for the PANA agreement to have legal force. The formalities for the membership of Cape Verde were completed in Dakar by Corsino Fortes, the deputy Cape Verdian secretary of state for information who ended an official visit to Senegal on Thursday. Mr Fortes asserted that Cape Verde was ready to lend its support to PANA in order to make it a success and he stressed that the Pan African Agency constitutes a weapon of defense against the big agencies. On his part, Chiekh Ousamne Diallo, director of PANA, said that the agency, which is to begin its activities in 1982 constitutes a complex and delicate undertaking and a challenge that the African states must meet. He announced that a school of journalism for the Portuguese-speaking countries would be created soon. A joint commission of the PANA and UNESCO will visit Cape Verde and Guinea-Bissau this month in connection with this, Mr Diallo said. [Text] [AB031938 Paris AFP in French 1801 GMT 3 Dec 81]

CSO: 5500/2062

BRIEFS

INTERNATIONAL TELEX COMMUNICATIONS RESTORED--Ndjamena, 14 Dec (AFP)--Telex communications between Ndjamena and the outside world, which were disrupted in March 1980, the date of the resumption of fighting in the Chadian capital, were reestablished on Monday. In addition to the telex link, Ndjamena is open to Europe by telephone. Telephone communications are expected to be established between Ndjamena and the African countries as of Tuesday. The establishment of telex and telephone links is in addition to a mini postal service between Ndjamena and the outside. [Text] [AB141353 Paris AFP in French 1223 GMT 14 Dec 81]

CSO: 5500/2062

TELEPHONE CENTER CHIEF DISCUSSES TELEPHONE SERVICES

Brazzaville MWETI in French 3 Nov 81 pp 2, 7

[Interview with Honore Maliki, chief of the Brazzaville telephone center by Mayouma Mbaloula; date and place not specified]

[Excerpt] [Answer] The telephone, which was a luxury item several years ago, has become a working tool. It was therefore necessary to replace the R6 with a more efficient telephone exchange, and in 1973 installation began of the new Janus Delta Central (connection through analysis and uniselection notification). The installation work terminated in 1975 and the central was opened by comrade Marien Ngouabi. We must point out that the Janus Central, a semi-electronic system with a capacity of 4,600 subscribers at the present time, can be expanded to 10,000 subscribers.

[Question] What is the number of subscribers who are linked up in the national project?

[Answer] The Peoples Republic of the Congo has at the present time 18 automatic telephone centrals, and the number of subscribers linked up, that is, in operation, exceeds 8,000; Brazzaville has 4,446 subscribers, with an approximate capacity for 4,600, and Pointe-Noire has 2,352 subscribers, with a capacity for 2,400. The subscribers of the other telephone centers in the country vary between 50 and 400.

To these subscribers who benefit from an automatic service, we must add a number of subscribers linked up on manual switchboards in various places, such as Mossendjo, which has 28 subscribers, Kibouende 17, Mfouati 8, Boko 27, Missafou 9 and Madzia 8. It is understood that within the framework of the 5 year plan other places will be automated. But now we are speaking only of what is already in existence.

[Question] How are the subscribers taxed?

[Answer] The taxation varies according to the manner of operation and the type of communication. Regarding the Brazzaville subscribers, since the new central serves them, the subscribers are taxed according to the type of communication.

For example: When a subscriber in Brazzaville calls his party in Brazzaville, this is called a local communication. The meter of the subscriber making the call receives, when his party answers, a single impulse corresponding to a base tax, which is 45 CFA francs. And the time period of the conversation is undetermined.

On the other hand, if the same subscriber in Brazzaville calls his party in Pointe-Noire, this is called an inter-urban communication. The taxation is made by period, that is, the meter of the subscriber making the call periodically receives the same impulse mentioned earlier, and each impulse equals a base tax. The periodicity of this taxation varies according to the distance, and an electronic instrument sends back these impulses.

[Question] How do you explain the absence of telephones in certain districts of Brazzaville?

[Answer] At the present time the city of Brazzaville is supplied with only a single telephone central. All the cables start from this central towards Brazzaville's districts and end at quite definite points called sub-distribution, where the subscribers of the district are supplied from sub-distributors. It sometimes happens that one of these cables is saturated, that is, that there are no more pairings available. In that case, as long as another cable will not be installed, it is impossible to satisfy any new request for telephone installations. Moreover, there are new districts such as Mfilou, Moukondo, etc., where no telephone cable has been installed. The persons living there must still wait a little while, as we remind them that the telecommunications material is very expensive, and we cannot do everything at the same time.

Besides, in a not too distant future, the installation in certain districts of the city of telephone centrals will resolve a certain number of problems.

[Question] Why are there so many telephone breakdowns in rainy seasons?

[Answer] Most breakdowns during the rainy season are due to the cables. As a matter of fact, during the dry season many road repair projects are done. Heavy vehicles sometimes damage these cables, and as soon as the rains start to fall, the cables "drink the water" and cause breakdowns. There is also the age of the cables. Some cables were installed many years ago, about 1950, and there are others of which we cannot any longer find the layout. Let us also point out that during the rainy season, the big considerations: wind, storms, atmospheric discharges (lightning) do not make the task of the telecommunications management easier.

[Question] What should one do when the telephone is not working?

[Answer] The procedure is very simple. It is enough to go to your closest neighbor who has a telephone and to dial 13 (the out of order service) and state the problem. Your neighbor has nothing to fear, since a call to 13 is free. In the event that there is no telephone in the vicinity, all you have to do is appear at the telephone central (opposite the Vog cinema) and speak to the out of order service.

[Question] How do you explain the slowness of the emergency repairing?

[Answer] Once the out of order service has been informed, it proceeds to test the telephone number that is not working. The breakdown can be located either in the telephone central, that is, the distributor, or in the telephone apparatus itself, or on the contrary between the two ends of the line. In these three cases mentioned there are specialized personnel who must intervene. Relieving an out of order telephone minute, a week or sometimes a little longer, according to the seriousness of the breakdown. Changing a fuse, for example, does not require much time.

9545
CSO: 5500/5632

RENOVATION OF TV-RADIO NETWORK PLANNED

Agreements Signed

Abidjan FRATERNITE MATIN in French 24-25 Oct 81 p 4

[Article by Diaby Aboubakar: "Several Market Agreements Signed by Minister of Information"]

[Text] Several market agreements were signed last Tuesday at the Mininsry of Information.

These deal with various types of radio and television equipment. Thomson CSF proposes to go ahead with the doubling of the video transmitters and equipment; as to the TRT Company, it is taking charge of radio-wave transmission. The AMAN Company, for its part, is supervising a complete energy review. And for the satisfactory utilization of all this equipment, 32 officials will be sent to France for training.

These markets are entering the first phase of a vast program for the renovation of the radio-television network prepared by the ministers of economy and finance, plan and industry, and information, and submitted for examination by the chief of state who had approved it in 1978.

It should be recalled that Amadou Thiam had then gone to France, where he got in touch with the French Ministry of Industry for the implementation of this program.

This meeting was the prelude to agreements between the central fund for French economic cooperation and our Ministry of Information.

It is this French institution which negotiated the framework necessary for the achievement of the radio and television broadcasting network renovation project.

The cost of implementing this program is 7.68 billion CFA francs, with World Bank support.

It should be recalled that coverage of the national territory by the RTI [Ivory Coast Radio and Television] is an idea dear to the chief of state, who stated: "I am astonished that the rural world is too often cut off from information."

"This situation must change, and I am giving you today the assurance that it will change.

"The right to information is a fundamental right, and it is my intention that it should not be solely reserved for the needs and satisfactions of a few."

The integrated, emergency-level program includes, among others, equipping the Koun, Man, Bouafle, Tieme, Abobo, Dimbokro, Niango, Divo, Touba,Seguela, Abengourou, Bondoukou and Bouake regions with transmitters.

Details Provided

Abidjan FRATERNITE MATIN in French 27 Oct 81 p 7

> [Excerpts] Several market agreements were signed last Tuesday by the minister of information Amadou Thiam, as part of the radio-television network renovation program. We gave some explanations about this in our Saturday issue. But in order to have ample information, we got in touch with the office of the minister of information, which enabled us to obtain numerous interesting details.

Indeed, in the current world economic situation, it was no longer possible to envisage the complete implementation, without delay, of the large-scale Ivorian radio-television development project. Studies of this large-scale project are continuing, however, without stopping, in accordance with the wish of the chief of state himself. Implementation will be accomplished in stages, in accordance with financial possibilities and political urgencies. However, it was urgent to repair what already existed, to improve the security of the installations, to ensure maintenance services and to improve, if possible, reception conditions for the broadcasts.

Ivorian Network

The current renovation program, therefore, provides not only for repairing the transmitters and relay stations but also for doubling them. Each center will henceforth have available indispensable emergency transmitters, capable of replacing, without change of power, the present transmitters.

Also envisaged is modifying a certain radio broadcasting link layout, in particular, the Abidjan-Bouake artery, which constitutes the spinal column of the Ivorian network, and whose reliability is therefore of paramount importance. A remote control and surveillance system will be set up, making it possible for a central control station installed at Abobo to maintain constant supervision of the overall state of the transmission and broadcasting networks. Any incident will be reported immediately.

Very special attention has been given to energy sources: repair and strengthening of the generating stations--the EECI [Ivory Coast Electric Power Company] cannot be everywhere--but also utilization of new energy sources from thermo generators, made possible by the low consumption of the modern equipment which will be installed.

Practically all the present broadcasting stations, both radio and television, and all the relay stations are involved in the renovation program, which will be carried out within a maximum period of 24 months.

Also envisaged is the installation of rebroadcasting stations in the two cities of Abengourou and Bondoukou; at present, neither of them is well served by the only major transmitter in Koun.

Maintenance Facilities

Such is in brief the spirit of the renovation program and the framework in which it is placed.

Our suppliers are, for broadcasting and production: Thomson CSF; for transmission: TRT; and for energy: AMAN.

The future, which we hope is near, will make it possible to pass to the following stages of the large-scale RTI development pooject. In conclusion, however, it is undoubtedly important to stress that investing can only be useful if it is accompanied by the setting up of facilities for maintenance and operation, staff in sufficient numbers and with suitable qualifications, an operational budget compatible with the amount of capital to be conserved, and with the objective of radio and television everywhere: to inform, instruct, entertain and contribute to the development of the nation.

9434
CSO: 5500/5627

FIRE DESTROYS MAPUTO TELEX INSTALLATIONS

Maputo NOTICIAS in Portuguese 7 Nov 81 p 2

[Excerpts] A short circuit in the battery room evening before last completely destroyed the Maputo Telex Exchange, paralyzing the entire national network of this telecommunications system. One of the emergency measures taken to minimize the effects of this situation was to send telexes, as of yesterday, through a public telex facility set up at the Central Post Office.

The fire resulting from the short circuit damaged all the equipment of the Telex Exchange at an estimated cost of about 100,000 contos. This equipment was purchased 10 years ago and was shared by the A and B Subscribers Exchange and the Transit Exchange (national and international) whose machinery was also involved.

All the country's exchanges were interconnected with that of Maputo, which handled all telexes sent abroad. At present only the Beira exchange can send telexes to Zimbabwe.

Intensity of Fire

The short circuit, discovered at about 2000 hours, resulted in a slow burning of the metal cables connected to the batteries and various pieces of equipment. Being covered with plastic and other synthetic materials, the cables completely melted producing a temperature estimated to have reached 100 degress [Centigrade] and a dense cloud of smoke mixed with toxic materials, which completely blackened the interior of the exchange.

The cause of the short circuit is not yet known, but, according to what our staff was able to learn at the scene, the intense heat we had day before yesterday and the fact that the air conditioning unit which serves the Maputo Telex Exchange was broken down were thought to have resulted in an extremely high temperature causing the combustion.

All Fire-Fighting Units Mobilized

"We do not recall any incident this serious in the past several years. We have called out all available units to fight the blaze, but we have now been there more than 3 hours without even reaching the main area of the fire." This statement was made by the fire chief, already visibly exhausted as were all the members of his crew.

It was already after 0100 hours when all the firemen and the team of experts managed to enter the battery room. The final result was that the A and B Subscribers Exchange and the Transit Exchange (national and international) were largely destroyed.

8568
CSO: 5500/5625

BRIEFS

NO REGIONAL BROADCASTING STATIONS--Radio Mozambique denied yesterday the news about forthcoming regional broadcasting stations that had been announced during the course of the week and that our paper had published. In a communique to our paper, Radio Mozambique stated that the installation of such equipment is part of the project that Radio Mozambique aims at carrying out in the decade of the eighties to provide better radio coverage for the entire country. A study of this project is planned for next year, with the assistance of the International Telecommunications Union. [Tex] [Beira DIARIO DE MOCAMBIQUE in Portuguese 7 Nov 81 p 3]

CSO: 5500/5644

FUTURE OF TV HINGES ON TALKS

Mbabane THE TIMES OF SWAZILAND in English 2 Dec 81 p 1

[Text] **THE future of the Swaziland Television Broadcasting Corporation is hanging in the balance — depending on negotiations between the corporation and the government.**

This was disclosed by the Minister for Finance, Mr. James Simelane, yesterday.

He said the government was involved in tough "nuts and bolts" negotiations with STBC to decide the future of the corporation's financing.

He told Parliament that Cabinet met from 9.30a.m. to 1.00p.m. on Monday discussing STBC's problems.

He has been given Parliament's approval to provide an allocation of E150,000 to STBC. This is for the period from March to the end of September.

Mr. Simelane said the government was approached by STBC in January to give notice that the station would close down by the end of March this year.

The government asked that the station should continue broadcasting at least until the King's Diamond Jubilee Celebrations in September. This was so that the celebrations would get live TV coverage. An agreement was made under which STBC would continue operations until the end of September on condition that the government paid for all financial losses incurred during that period.

Mr. Simelane said STBC came back at the end of September and pointed out that the six-month agreement had expired. Negotiations are still in progress. However, he did not say exactly what the government was planning to do to alleviate the situation.

It has been reliably learned that South African tycoon, Natie Kirsh, has shown an interest in STBC and has approached the government in this connection.

A total supplementary budget of nearly E5 million was approved yesterday.

The total supplementary estimates breakdown as follows:-

A sum of E250,000 goes to the Ministry of Agriculture and Co-operatives to cover costs of resettling families who have been removed from the sugar development area around Simunye.

E46,000 is a transfer to the Swaziland College of Technology of boarding and lodging fees deposited into the consolidated fund by the college.

E45 000 is for the provision for an un-named Deputy Minister who has been transferred to another department.

E43,000 is additional provision required to cover the costs of expansion of services in the Customs and Excise Department.

Another E4,603 is additional provision to ministries and departments to cover costs of the interim salary awards and regrading review.

E4,600 was provision required to cover the costs of stationery and other items during the recent by-elections.

CSO: 5500/5643

MILITARY TELECOMMUNICATIONS SATELLITES BEING GIVEN PRIORITY

Paris ELECTRONIQUE ACTUALITES in French 23 Oct 81 pp 1, 10

[Article by G. Bidal]

[Text] The use of two repeaters on the French Telecom 1 telecommunications satellite is the subject of the Syracuse military program, a program amounting to 1 billion francs providing for construction of 25 ground transmitting-receiving stations, developed by Thomson-CSF. This priority given by France to telecommunications in the military exploitation of space does not prevent continuation of studies on the Samro observation satellite for which a decision on the the actual initiation of the program is scheduled for 1982.

The various French military projects on satellites have always left a question mark hanging over the priorities given all during the last few years to telecommunications programs or to earth observation programs. Now it seems that they are in a position to see more clearly in this matter. During this decade, France will indeed gamble on both systems, but with priority, at least chronologically, to telecommunications.

The Syracuse Program

In fact, there will be considerable military use of the Telecom 1 satellite, in spite of its "preoperational" nature. It is known that two repeaters, on 7.25 and 8.4 gigahertz, will be carried by Telecom 1. There is a 50-million-france participation in construction of the satellite by the Defense budget. An annual use fee of 50 million francs will also be paid during the entire life of the satellite. But, of course, the heaviest military investment will be on the ground segment. Over half of the military expenditures devoted to this programs, about 1 billion francs, will be assigned to it. The operational program, baptized Syracuse (Radiocommunications System Using a Satellite) includes construction of 25 sea or ground stations, being carried out at present by Thomson-CSF. Three large stations will be located at Paris, in Brittany and in the south of France. Nine heavy airborne stations can be used on any point whatsoever on French territory, including overseas, to which are added three stations mounted on land vehicles and 10 naval stations that are to equip large surface ships of the Navy. The digital sound links will use a different technique from civilian repeaters, namely multiple access for spectrum spreadings (AMRC-SSMA) already tested in various technical establishments (CELAR, SCTI, DTCAN) with the Franco-German Symphonie satellite.

The DTE [Missile Technology Directorate] in charge of the Syracuse program has started studies for a military communications satellite that might replace Telecom 1 starting in 1990.

There is no doubt that the opportunity to use Telecom 1 played a large part in the priority given to the military communications program. Nevertheless, it is not possible to draw a parallel with the problems of observations and use of the Spot earth observation satellite. Although financial participation by the military in the Spot program is sizable, close to 150 million francs up to the end of 1981, and although the Samro (military optical reconnaissance satellite) project will make ample use of the experience of Spot (the Spot launch pad will be reused), the military requirements differ rather considerably from the civilian requirements. Thus, the camera's resolution will be far superior to the Spot camera. Consequently, the manner of picture taking will be different and the rate of transmission will be definitely higher with antijamming protection. The sensors should also be protected against laser blinding. The orbit itself will be lower than Spot's orbit.

These differences in design explain why the industrial distribution, revealed by Mitterrand, president-director general of Aerospatiale, last January (see ELECTRONIQUE ACTUALITES for 30 January), is quite different from the distribution set up for Spot. The overall prime contracting is assigned to Aerospatiale and the satellite, launch pad and equipment compartment are assigned to MATRA [Aeronautical Equipment and Production]. The structure, the technical system, the solar generator and the picture-taking instrument will be made by Aerospatiale. Thomson-CSF is responsible for the telemetry and remote-control systems and for the transmitting-receiving station. MATRA and SEP [European Propellant Company] will provide the picture workup center, the whole ground segment and control center with Aerospatiale as prime contractor. The other industrial cooperators are already present in the Spot program, like Crouzet (electronic subassembly), SODERN (detection system), REOSC (optical system). ENERTEC is added to them for the recording system.

Six Billion Francs

The cost of the Samro program amounts to 6 billion francs, of which 400 million francs have already been spent for studies. The present phase pertains primarily to the camera and the recording system.

Although the project is well underway at present, as is seen, the main decision still has to be made: the decision to start the industrial part of the program. In this connection, the Defense draft budget for 1982 provides no answer, providing only for renewal of the funds allocated for 1981: 136 million francs.

The progress status of the studies makes it possible, nevertheless, to foresee a decision by next year. Under these conditions, Samro might be placed in orbit starting in 1986.

10,042
CSO: 5500/2039

BRIEFS

SATELLITE NAVIGATION RECEIVERS--The CSEE [expansion unknown] has received from the Navy a large order for Sylosat-SMN satellite navigation receivers. About 30 units will be delivered both for nuclear submarines and for surface ships. Moreover, a first production-line unit has just been installed on board the first nuclear attack submarine (SNA), "Rubis." About a dozen orders have also been placed by foreign navies. It should be pointed out that the SMN is a new version with a compact microprocessor of the Sylosat system, marketed for several years now by CSEE, for position finding by means of the American Transit satellite system. [Text] [Paris ELECTRONIQUE ACTUALITES in French 23 Oct 81 p 10] 10042

CSO: 5500/2039

TELECOMMUNICATIONS ORGANIZATION DEPENDS ON EAST BLOC MATERIALS

Athens OIKONOMIKOS TAKHYDROMOS in Greek No 45,5 Nov 81 p 51

/Article by Giannis Dimitriadis: "OTE's Close Dependence on Eastern Bloc Countries"/

/Text/ What is the relationship between the Greek Telecommunications Organization /OTE/, the Ministry of Defense and the European Economic Community /EEC/? This is not a question regarding a childish enigma but a rather modern illustration in the sector of searching for modern electronic equipment by Greece.

There have been charges that our country did not take the necessary precautions to guard its telecommunications equipment from "foreign eyes," that is, from the Soviet bloc. There have been also charges that it did not protect satisfactorily the domestic industry and its relations with the EEC countries. These accusations were voiced by official lips as well as by competitive corporations. And if one were to believe such corporation reports, one should accept that a large part of our electronic production will depend on the communist countries.

Sometime in 1977 OTE proclaimed a competitive bid (No. 7184) to procure by low bidding 193 PMC systems (electronic equipment) which would cover the needs of a 4-year period. The bidding took place and the contract was given to the East German company Electrotechnic. The difference between it and the next company SAT (French) was only 4 percent. Sparked by this preference--but not necessarily because of it--a fight started among the West European companies which were active in the Greek area trying to gain control.

The cause goes further back. It was the effort of the junta to come out of its isolation. In this effort it found allies among the governments of the Eastern countries, in exchange for certain contracts. On their part, the companies of those countries in order to keep the Greek market used the method of "dumping" (at least according to their western competitors).

In 1978 the spokesmen of the French firm SAT, the Pierre Vauthier company (Amerikis Street No. 19) submitted a petition seeking the annulment of the contract signed with the East German company. /The French company/ claimed that the difference in price was very small, the equipment much superior, and that Greece was totally dependent on telecommunications equipment coming from the Eastern bloc.

It is from this point that the intervention of the Ministry of Defense begins (which, of course, properly considers telecommunications as part of the overall

defense system). In some way, not necessarily sinister as some imply, the document of the company, which was addressed to the minister of communications reached the desk of Defense Minister E. Averof, who in a letter asked that the Ministry of Defense be informed about any OTE bidding regarding major projects. Shortly thereafter he asked in a circular letter that "no telecommunications project be undertaken without the consent of the Ministry of Defense." He referred to a previous permanent circular letter.

But the problem had just begun. A few days later the /West German/ Siemens Company which operates in Greece and produces electronic equipment joined the fray. This time the issue was OTE competitive bid No. 7202 for "the procurement of 234,700 /telephone line/ connections." In a letter to the Ministry of Communications, the company charged that because of the dumping policy and the political prices offered by the East German Electrotechnic Company it won the contract. At the same time, Siemens argued that the "procurement of 234,700 connections from /the East German/ company presages that all future extensions of new centers to be established, that is, the totality of new OTE installations until 1983, will be assigned to the same company."

With another memorandum Siemens told the /Technical/ Chambers, the National Bank (which had given it loans), the General Confederation of Labor /GSEE/ and the Association of Greek Industrialists /SEV/ that OTE prefers to call international bids while there is domestic equipment, with obvious consequences to foreign exchange as well as employment. The same memorandum indirectly but clearly states that it is necessary to keep in mind the general objectives of policy and defense which do not allow total dependence of a country--which belongs to the West--on equipment from communist countries. In closing, the memorandum (written in 1978) says that while the country is getting ready to join EEC and while the European Community considers a common telecommunications system, we opt for equipment from the Eastern countries.

In the context of the overall change of direction in the Greek economic policy which seeks more the transfer of know-how than the procurement of finished products, OTE established the ELVIL /expansion unknown/. Then OTE searched for a foreign entity--through international competition--able to provide financing know-how and personnel training to set up an industry for the production of high technology electronic equipment.

Several companies appeared with serious offers of know-how, financing and satisfaction of all other conditions. These companies came from both the EEC and third world countries, several of them from the communist bloc. In this case, since the competition dealt with large sums of money but also "tied" our country technologically, EEC decided to move and protect its interests actively. The method it used was a violation of article 93 of the Treaty of Rome, which in essence prohibits "dumping."

On 24 November 1980, the [illegible] commissioner on industry, Vice-Count Davignon in a letter to EEC relations Minister Kondogiorgis asked that the EEC offers be prefered in the ELVIL competitive bid, saying that this would be a good-will gesture on the part of Greece in view of its entry into the EEC, and also that

this will contribute to the harmonization of the telecommunication networks in the member-states, a plan then underway. At the same time, the letter made reference to the price policies characterizing the Eastern bloc companies.

On his part, the Greek minister without promising a solution ("...this is not a matter under my jurisdiction...") undertook to inform the appropriate ministers on the EEC concerns.

Following the country's entry into EEC, Davignon sent another letter in April to /Foreign Minister/ Mitsotakis since in the meantime the EEC matters had been transferred to the Foreign Ministry. Once again /Davignon/ repeated in his letter the same arguments and suggested a way to strengthen the task of the EEC company by the community or the government of the participating company in order to enable /the company/ to compete against the "dumping" of prices which were again offered by the Eastern countries.

The "violation" of article 93 of the Treaty of Rome would be condoned under the following conditions:

1. When a member-state faces competition from a non-EEC country and the competitor from the third country offers subsidized prices.

2. When no other company from a member-state offers nonsubsidized prices.

3. If the EEC as a whole has an "economic interest" in undertaking the project.

With this "loophole" in the treaty, Greece could ideally gain a great deal in the area of financing for major projects from the EEC while securing better technology.

The problem is still there. The new government will certainly have to deal with this issue. It is also certain that it will take seriously into account what has happened before, the EEC views as well as the views of the Ministry of Defense.

The references to OTE are being used here only as illustrations. Similar situations emerged in the contractual agreements of the Railways Organization of Greece and the projects of the Public Power Corporation as well as the projects related to transportation. These have resulted from the new conditions created by our induction into the EEC and the older connections with the Western alliance.

7520
CSO: 5500/5310

END

JPRS 79763

30 December 1981

Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 195

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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30 December 1981

WORLDWIDE REPORT

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 195

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INDIA FOR REVISION OF GSO ALLOCATION

New Delhi PATRIOT in English 20 Nov 81 p 5

[Text] INDIA has stressed the need for revising the present procedure of allocating Geostationary Satellite Orbit (GSO), which was now operating more to the advantage of the developed countries, reports UNI from New Delhi.

This demand has been made in the National Paper prepared by the Government for the Second United Nations Conference on Exploration and Peaceful Uses of Outer Space (UNISPACE 82).

Since the GSO and the frequency spectrum have limited resources, their utilisation by nations must take into consideration factors such as population, terrain, size, growth-rate and the present and future needs for satellite, communications, the document says.

Also, efforts to increase efficiency of GSO usage through continuing technological advances, though welcome, must not be allowed to act as a barrier to efforts of developing countries striving for self-reliance through use of relevant technologies, it had been pointed out.

The Paper says that the GSO, a limited though non-depleting resource of the mankind, is presently being exploited in a manner that a few countries which have the necessary means to preempt orbit and frequency positions, appear to take inordinate and inequitable advantage of the present first-come-first-served principle.

Some developing countries, who may have identified a need in the future for specific orbit positions, could be forced with undue haste to seek launch and other services from the space-haves, or face forfeiture of their GSO slots.

The Paper calls for revision of the current allocation methodology, making present and future needs of a country an essential criterion in a new dispensation, rather than the present method which only accounts for a country's ability to occupy a slot in the GSO.

The Paper suggests that new and more expensive technologies should ordinarily be adopted by the developed countries for international systems, leaving the utilisation of simpler and less expensive technologies for the developing countries.

The greater the use of this resource by given nation, beyond its fair share, the greater should be its obligation and responsibility to improve utilisation of this limited resource, India has emphasised.

This anomaly points to the need for evolving a system of allocation and utilisation of the GSO which will not only prevent squatter rights being conferred on permanent basis but also provide for technological advances to accommodate future communications growth needs of all nations.

CSO: 5500/7043

BRIEFS

COLOR TELEVISION TRIAL--New Delhi, Nov 17--Delhi Doordarshan today began colour television transmission on an experimental basis The transmission is being done from a studio at the Information and Broadcasting Ministry pavilion at Pragati Maidan, the venue of the current International Trade Fair. The transmission is being interspersed with F.M. stereophonic music. Dr. C. S. Rao, Head of the Research Department of Akashvani and Doordarshan, said the colour transmission could be received within a radius of two kilometres with ordinary aerials and five kilometres with the help of boosters. The transmission opened with a recorded speech of the Minister for Information and Broadcasting, Mr. Vasant Sathe. [Madras THE HINDU in English 18 Nov 81 p 9]

REMOTE SENSING CELLS--New Delhi, November 18 UNI)--India is developing low-cost remote sensing cells to fruitfully utilise the vast amounts of data that will flow from future remote sensing satellites. The use of the data calls for development of a number of strongly user-oriented regional remote sensing units in the country. Low-cost designs for such units are being evolved by the department of space through inter-active projects with the users. This is revealed in a national paper prepared for the second United Nations conference on exlporation and peaceful uses of outer space (Unispace 82). The Indian remote sensing (IRS) system will attempt at meeting Indian resources management requirements with emphasis on agriculture, water-management, forestry, mineral geology and petroleum exploration. discussions with the potential users will be continued to define the design parameters of the space segment. It is prooposed to build the satellite indigenously, based on technology development acquired through aircraft sensors, Bhaskara payloads and other follow-up systems. The launch of the first spacecraft of the series may have to be from abroad, later ones being by Indian launchers, the paper said. [Bombay THE TIMES OF INDIA in English 19 Nov 81 p 6]

NEW TELEPHONE EXCHANGES--Santiniketan, Nov. 24--Nearly 100 public call offices, together with more than 30 new telephone exchanges will be opened in the rural areas of West Bengal by March. This programme is being implemented as part of the Union Communication Ministry's policy of extending telecommunication facilities to villages. Giving this information, Mr S. M. Banerjee, Deputy General Manager, Telecommunications, West Bengal Circle, said during his recent visit here that the capacity of the existing telephone exchanges at Siliguri, Gangtok, Haldia and Port Blair was being raised to cope with subscribers' demand. The subscriber trunk dialling serivce would be introduced soon between Siliguri and Darjeeling, Microwave links between Ranigunj and Asansol and between Malda and Calcutta would be introduced shortly. [Calcutta THE STATESMAN in English 24 Nov 81 p 10]

INSAT TELEVISION SETS--The Information and Broadcasting Ministry has placed orders with the Electronics Corporation of India for prototype television sets that can receive telecasts relayed through Indian National Satellite (INSAT-I) beginning next year. Three districts each in Andhra Pradesh, Maharastra, Uttar Pradesh, Gujarat, Orisa and Bihar have been selected [word indistinct] the initial phase of the satellite transmission--the first time the system will be used after the year-long satellite programmes beamed in the SITE experiment in 1975-76 Union Information and Broadcasting Minister Vasant Sathe told the Rajya Sabha on Monday. While SITE used a US satellite under a cooperation scheme the new programme will be based on an India-owned satellite. The Posts and Telegraphs Department has been asked to provide the up-link facilities in the six States as also at Delhi for forming the national network. Orders for two prototype direct reception sets have been placed on the ECIL and quotations have been received from BEL for the S Band relay receivers. According to the I and B Ministry, specifications for equipment at programme production centres have been finalised and the accommodation and staff needed for the first phase sanctioned. [New Delhi PATRIOT in English 24 Nov 81 p 7]

TELECOM EQUIPMENT IMPORTS--Telecommunication equipment worth about Rs 61.7 crores is expected to be imported during 1981-82 Minister of State for communication Kartik Oraon told Mr R R Morarka in the Rajya Sabha on Monday, reports PTI. Replying to another written question of Mr Bhola Prasad, he said the selection of collaboration and sanction for the project to manufacture one million telephone instruments and 1.5 million critical sub-assemblies of contemporary design at the Indian Telephone Industries at Naini and Bangalore are in progress. An Italian and a West German firm had submitted tenders for this. [New Delhi PATRIOT in English 1 Dec 81 p 5]

CSO: 5500/7046

BRIEFS

NWFP TELEVISION BOOSTER--Razmak, Dec. 2--Fazle Haq, the NWFP Governor, today inaugurated television booster at Alexandera Hill top, opening up Pakistan television programmes for about two lakh people in Waziristan agency. The booster, installed at the height of about 8,000 feet, would cover nearly 5,000 square kilometre area from D.I. Khan to Wana, in North Waziristan Agency. The inauguration ceremony held atop the Alexandera Hill, about 10 kilometres from her amidst snowfall, marks a new era of socio-economic development for the area. Speaking on the occasion, the Governor said that installation of the booster in Razmak was yet another step forward to keep the masses abreast with the nation's strides for socio-economic progress and the international development. [Islamabad THE MUSLIM in English 3 Dec 81 p 6]

CSO: 5500/4522

BRIEFS

NEW MICROWAVE LINE--At the request of television viewers, a JILIN RIBAO reporter visited the provincial post and telecommunications administrative bureau and the provincial broadcasting bureau. Responsible comrades and personnel at these two bureaus discussed construction of the microwave line installation project and television program reception. The function of this microwave line is to relay the programs of the central television station. Construction began this April. Because this microwave line is long, the installation work is arduous and many new problems have cropped up, this project will take a long time to complete. The installation of the microwave line, which links four provinces and one municipality, is contracted by the second engineering company under the Post and Telecommunications Ministry. The installation work on main parts of this microwave line has been virtually completed. Many special targets have been fulfilled. To enable television viewers to receive better reception of the central television station, the workers are trying to wrap up their tasks as soon as possible. It is estimated that this project will be completed by the end of December and will be put into operation on 1 January 1982. [Text] [SK080930 Changchun Jilin Provincial Service in Mandarin 1100 GMT 6 Dec 81]

CSO: 5500/4004

BRIEFS

TV TOWER RULING--Government has dropped another of its requirements for the setting up of pay television stations in Bermuda. The Hon. John Swan, Minister of Home Affairs, announced yesterday that he would not now demand that stations share a common transmission tower. And he said Government would not become involved in the building of such a tower. The move means yet another change in Mr Swan's much-criticised telecommunications policy announced earlier this year. He has already dropped demands that pay TV stations pay a 10-15 percent tax on their gross revenue, and that no advertising be allowed. Mr Swan has made the changes after representations from companies interested in starting pay TV stations. But he denied that the changes indicated there had been a lack of consultation with the various interested parties before his telecommunications policy was announced. "It is not a question of the policy being a mess--it is simply a practical response to what people want," he said. Mr Swan was speaking at a lunch he hosted, and paid for privately, for the media at the Hamilton Princess Hotel. He said his policy had generated a useful dialogue between Government and the prospective pay TV companies. "This two-way exchange of information has made all parties come to better appreciate the complex technical considerations involved in such a policy statement, as well as the tremendous impact that it has on the cultural and social life of Bermuda," said Mr Swan. Government could not justify investing in such a project. Mr Swan said that the companies involved would not now be expected to share a common transmission tower. [Text] [Hamilton THE ROYAL GAZETTE in English 23 Oct 81 pp 1, 2]

NEW SATELLITE DISH PLAN--Cable and Wireless has asked Government to approve the construction of a new $18 million satellite earth station at its Devonshire site. The British communications company wants to erect a dish roughly twice the size of the present antenna which is almost wholly committed to meeting NASA's requirements. Cable and Wireless general manager, Mr Harry Saunter, said yesterday that in addition to the proposed earth station, the company is awaiting planning approval to erect a smaller satellite monitoring dish. He said that the main aim of the new earth station is to provide an alternative means of communication by 1985 when the existing submarine cable linking Bermuda and the U.S. reaches the end of its 25 year design life. Said Mr Saunter: "By what time we will also need additional capacity to meet growing communications traffic. The existing direct cable has a capacity of 80 channels. "The new earth station will provide more than 1,000 channels and will meet Bermuda's communications needs until well in the 1990s." Cable and Wireless wants to start work on the project around the middle of next year and is aiming for a completion date sometime during 1983. If the planners give the scheme the green light, the company will put up a dish

about 100 feet high and about the same in diameter. But Mr Saunter stressed that the equipment is unlikely to spoil the Devonshire landscape. "Very little of the dish will be visible from the Middle Road or from North Shore," he said. "And anyone looking from east to west across the site, will see it end-on rather than facing them, so that it will not spoil the landscape." [Text] [Hamilton THE ROYAL GAZETTE in English 20 Nov 81 p 2]

CSO: 5500/7510

OFFICIAL DESCRIBES EXPANSION OF TELEPHONE NETWORK

Tehran SOBH-E AZADEGAN in Persian 17 Nov 81 p 10

[Interview with Mahmud Va'ezi, director-general of the Telecommunications Company]

/Excerpts/ The expansion of cities, easy communication among the people, and the facilitation of communication services have encouraged us to have an interview with brother Mahmud Va'ezi, director-general of the Telecommunications Company, which is printed below for the readers of SOBH-E AZADEGAN.

Question: Mr Va'ezi, since Tehran has become very large, naturally, more telephones are needed. What plans exist in this regard and what steps have been taken?

Answer: In the name of God, the compassionate and the merciful. Tehran and a few other cities are expanding. At issue is the policy which governed in the past in Iran. We do not support this policy. In the past, they did not worry about what happened to small, oppressed cities, whether they had communication facilities or not. They only made sure that the facilities of Tehran were taken care of. Therefore, our policy is to pay more attention to villages and deprived places and cities. Our people, especially our city people, should realize what our policies are. We want them to cooperate with us, to understand the times, and to have a basic, correct understanding of the economic issues, the war, the economic embargo, and the fact that we are now fighting all the small and large superpowers. Because of this, it is not in our best interests to try to increase comfort at the expense of taking care of the needs of the society. As we all know, there is a 13-year wait for Tehran. If we were to do so, we would have to use all of our budgetary and monetary resources for Tehran. That is why we have put aside this plan. We ask the people to feel that our problems are their own. They should know that the government is presently concerning itself with the oppressed rather than worrying about whether such-and-such home should have a telephone to be able to communicate with friends. We want to

establish communications for those who are seriously deprived, who can only contact other parts once a year.

Hence, our communications concerns will be based on need rather than on comfort. We have divided the priorities on the following basis.

1. Giving priority, energy, and resources to war zones and earthquake stricken regions.

2. Devoting energy and resources to negotiations for rural services, which consist of 1,600 units in Iran.

3. Deprived cities, which were the target of unkindness by the tyrant and which lack elementary means.

4. Providing more resources to revolutionary institutions and implementary organizations.

5. Expansion of the urban network.

Hence, with this introduction, the answer is that the Tehran region is not on our policy agenda. However, some telephone centers have been left incomplete from the past, which we are preparing to give to those who have been on the waiting list.

Question: Formerly, you were in charge of telexes. What system have you devised to prevent the misuse of telexes?

Answer: The telex has both a political and a commercial aspect. The political aspect is that the telex can be used against national and Islamic regulations. The telex is also the best means for the growth of trade and commerce in Iran. On this basis, when we studied the amount of telex equipment, we realized that we were weak in both areas.

For one thing, the telex was in the hands of those who were affiliated with minigroups or the past regime. We have formed an office of inspection exclusively for telexes and we have commissioned this office and have cooperated with the prime minister's office and the revolutionary prosecutor's office. They have studied the files of various companies and those who have trade permits. They examined them closely and those who should not have telexes were identified and their telexes were given to others, that is, to those who were waiting their turn. Another issue is the trade aspect. We have formed a group which studied the economic, political, and social needs of the time. Those whose businesses conformed with these issues were given telexes. Another thing we did, through the persistent, round-the-clock efforts of our brothers, was to create telex lines, numbering 1,300-1,400, with existing resources. These lines have now been freed and they are going through the final

stages. God willing, at the first opportunity, they will be distributed. Another thing that we did was to set regulations for the use of the telex. In the past, there were no clear regulations. Anyone could do whatever he wished. We devised a set of regulations for the distribution and use of telexes. Another thing that we did was to prohibit the buying and selling of telexes. That is, telexes cannot be bought and sold in Iran. The moment you no longer need a telex, you are to return it to the Telecommunications Company, which will, in turn, give it to those who meet the specifications. Another thing was the establishment of public telexes in various parts of Tehran. Similar to the postal service, which delivers letters, we did the same thing with telexes. In more commercial areas, we have opened offices. People can become members, give a number, and receive messages from all over the world. They can take a post office box or they can give their addresses and when the message is received, we will send it to them. Also, they can use the telex from the same place to send messages.

In order to prevent political misuse, we have prepared a special form, with the cooperation of our brothers in the prime minister's office and the prosecutor's office. This form must be completed by the highest official of a company, with pictures and complete information. They must pledge that they will not misuse the telex. We have even made up forms to be filled out by the operators, which would prevent their use in a manner contrary to the direction of the revolution.

Question: What steps have you taken to expand the country's telephone network?

Answer: Presently, we are being pressured to expand this telephone network. In light of what was said in the introduction, if we are able to inform the people of our problems, we will be able to do our job better. In this regard, we have different problems. The national budget and the Telecommunications budget are limited. Another thing is that some of the people in charge in the provinces are not cooperating with us as they should. For instance, in some cities, our buildings are ready but our switchboard is located elsewhere, where our building is not yet finished. If we are able to move it, many of our problems would be solved. For example, the Marand building is ready. We cooperated with the director-general of the province to begin work on the Salmas building, which will be ready in seven months. This will enable us to take the equipment to Marand and set it up, so that both the needs of Marand will be taken care of and, in seven months, when the Salmas building is ready, the Salmas equipment will also be ready to be installed for operation.

Another problem is that we are under an economic embargo and, therefore, we have not been able to purchase what we need. This has prevented the rapid completion of our work.

Another thing is that within the next 5 years, that is, up to '56 [21 Mar 77-20 Mar 78; as published], 1,200 telephone lines in Iran per year will be distributed. In the manner described, we will do something innovative to have automatic switchboards made and marketed in Iran. Then we will have much more extensive resources. Our brothers have devised plans to regulate the 1,600 rural centers, which would cover the 60,000 villages in Iran. Thusfar, services have been completed in 60 locations and we hope this plan will be successful.

Question: What steps have been taken concerning self-sufficiency in communication equipment, especially telephones, in the country?

[Answer] Self-sufficiency can be viewed from several perspectives. First is self-sufficiency in planning. In the past, the Telecommunications Company and Iranian industry existed in name only. In practice, they did nothing. Everything was done by others. What we did was to deal with self-sufficiency from the roots, meaning we started with a plan. On the whole, all the telecommunications planning was in the hands of Americans. Now, we can give the good news to the Iranian people that we do not have even one foreigner in our planning section. The planning for the systems is done by our brothers. Another issue concerns the center for telecommunications research, which has begun studying the future telecommunications needs of Iran. The extensive research during this period has already brought favorable results. God willing, in the near future, with the work of our won brothers, who were motivated by their faith, piety, sympathy, and love for Islam and the nation, we will be able to build this equipment and to begin to export their product. You know that these brothers have been very useful for the military and the guards corps and they have worked hard. This is another aspect of self-sufficiency. They have worked and are working both on the telephone electronic switchboard and on such things as long-distance communications systems, which will be on the market for use very soon, God willing. Another issue concerns the planning council. In the past, we did not do our own planning. We have formed a planning council, which has just about completed the plan for our next 5 years and is now working on a 20-year plan for the Telecommunications Company. This is only an example that proves that at the present time, despite all the terrorist acts, the imposed war, the economic embargo, and all the foreign enemies, we have been blessed, internally, by the presence of the imam and the forces of the imam's line and that we are able to have our own rule and to make plans for the next 20 years. Considering the things that we have now and the things we are confronted with, one is the telecommunications factories of Iran in which all telecommunications equipment and the telephone system for the whole country are being built. Before the revolution, this factory was totally dependent on foreigners. In our visit two weeks ago to this factory, we witnessed that, fortunately, 92 percent of the work has achieved self-sufficiency. Those who know about technical issues

and are involved in industry know that this is a great step for Iranian workers, for Iranian planners, and for all the committed experts who are involved in these jobs.

What has been done in regards to establishing electronic telephone systems in various areas of Tehran?

Answer: The electronic system was under a very large contract with the G. T. Company of the United States. They all ran away, hoping that we would need them to return. They left with this hope and took with them all the plans and other things which were to be used in the future. They did not even give us the spare parts for the operation of large equipment. Despite all of these shortcomings, our brothers began to work. Thank God for the confidence that Islam and the revolution have given to our committed experts. They have always hoped to be able to start the operation of these complicated systems. Their efforts have continued and now the Hafez center is ready for operation. About 500 lines have been distributed and the rest are being distributed. In the Ekhtiarieh center, all the technical problems have been eliminated. The customers are invited to come to to receive their telephones. But in other centers, including Zafar, Tajrish, Niavaran, Gandi, Tehranno, Karimkhan, Abbasi, and Tarasht, 40-80 percent of the work is incomplete. We predict that by Mar 85, the work of these centers will be completed and the lines will be distributed.

Question: If possible, give us the statistics on the work of the unit in your charge.

Answer: Between different cities, about 52 cities, connections have been established. You know, in the past, villages were not considered at all important, although they had nothing and lacked even the smallest equipment. We established communications between 52 small cities, which are:

(1) Lashgsara, (2) Nazok-e Olya, (3) Jozeh, (4) Asfidvajan, (5) Haruni, (6) Pardanjan, (7) Vardanjan, (8) Hoseynabad, (9) Shahrak-e Parandak, (10) Khusef, (11) Robat-e Sang, (12) Zaman, (13) Samashdar, (14) Gunieh, (15) Kalateh-ye Soltani, (16) Kalateh-ye Qarubeyk, (17) Kalateh-ye Farahbeyk, (18) Farashband, (19) Deyl, (20) Siahkalrud, (21) Pameneh-ye Kala, (22) Jaleq, (23) Bazman, (24) Zamik, (25) Pamchi, (26) Hir, (27) Qarrehchiq, (28) Vatian, (29) Kuzeh va Kahan, (30) Babameydan, (31) Gachsaran, (32) Sorkhan-kalateh, (33) Karimabad, (34) Dankagan, (35) Uziteh, (36) Katra, (37) Qadika Bozorg, (38) Rostamkar, (39) Kuheshtan, (40) Qarrehjen, (41) Saratrud, (42) Kahrizsang, (43) Musaabad, (44) Korubeh, (45) Dinan, (46) Qorveh, (47) Sharifabad, (48) Bazikia Kurab, (49) Sarmandan, (50) Parchin, (51) Kahlun, (52) Yunash. At the first opportunity, we will provide the people with the Tehran telephone

directory. It will be ready for everyone in six months and then part of our problems will be eliminated.

Once again, I will provide the people with the telephone number of the Telecommunications Company. If anyone should receive harassing calls, they can contact telephone no. 858585. I must add that it will not be like in the past, that the disturber is warned that he will be arrested after 15 days if he repeats this action; the council has resolved that any troublemaker who is caught will be dealt with most severely.

Another problem is that it is said that there is a shortage of two-rial coins. We have commissioned a group to install five-rial slots in public telephones so that you can use either two-rial or five-rial coins. This system has proven successful. By doing this, we have not had a shortage of two-rial coins.

Question: How did the differences with the F. I. C. Company turn out and what steps have been taken to pursue the man formerly in charge of this company?

Answer: F. I. C. is a company 50 percent of which belonged to Iran and an individual called Batmanqelich and 50 percent of which belonged to Americans. The initial investment in this company was one million rials. It had a 3,200 million-rial contract with the Telecommunications Company. It was the contractor of the company which abandoned its contract after the revolution and this company was closed down. Since a large number of our brothers worked there, the closure of this company harmed our workers. As a result, a government manager was appointed for this company. The back salaries of the workers were paid and a 900 million-rial contract was signed with this company for the year ending 20 Mar 82. With the new director, the company has become organized and is continuing its work. They have no business on a national scale. Only the installation of cables in Tehran is done by this company. When we worked closely with them, their work was not too bad. This problem is now in the international court. God willing, we will file a claim against them and you will be informed of it.

Question: Mr Va'ezi, as a former member of the Islamic societies of the United States and Canada, what is your feeling about the imam's recent message to these societies?

Answer: As you know, in the United States, the mass media, including radio and television, which have a common source, all united to destroy our revolution and to show it as 180 degrees other than what it actually is. Our brothers in the Islamic societies are the only force--in the heart of heathenism, armed with faith and piety, and inspired by the imam's directives, both before and after the revolution--which brings the truth of our revolution to the people. Through

interviews, demonstrations, seminars, and all that you see in the newspapers, they bring our voice to the people of the world, even giving up their studies and their living and being in the corners of prisons. They do not have the opportunity for activity, because they are very far away. Some other incentive should keep our brothers abroad to engage in activities. They should be in constant touch with Iran. The Imam's message, in my opinion, was to bring new blood to their activities before and after the revolution. It also had another meaning, that is, our people's reassessment of those brothers who have abandoned everything and are engaging in activities. This message stirred such emotions in the United States and Canada that they thought they had been active only to a certain extent, but not to the extent that is deserving of the kindness, statements, and message of the imam. They say that they are embarrased before God and the people of Iran and they must work harder.

Question: What is your opinion on the press and its role in directing or criticizing the authorities and what advice do you have for SOBH-E AZADEGAN?

Answer: The press is one of the informational channels of the people to the authorities. In my opinion, it can play a great role in the movement of the society. In other words, if the press is committed and responsible, it can play a correct role in the society. As the imam has said, the pen should always be in the service of God and Islam. If our press is so, and is motivated by God to write and deal with issues, I believe it can have the greatest mission in the society. In regards to SOBH-E AZADEGAN, I think that during the time of Bani-Sadr, it dealt with issues a bit too hastily. But, I know that it has been in the imam's line from the beginning and I hope it will remain so.

Start of City Telephone Installation in the Past Two and a Half Months

Azadi	5,000 numbers	26 Sep 81
22 Bahman	10,000	3 Aug 81
Azari	8,000	5 Sep 81
Jiraft	3,000	3 Aug 81
Meshkinshahr	1,500	26 Sep 81
Parsabad Safan	1,500	3 Aug 81
Esfarayen	1,000	3 Aug 81
Borazjan	2,000	3 Aug 81
Nahavand	3,000	26 Sep 81
Chaharbahar	2,000	24 Oct 81
Lar	3,500	12 Sep 81
Saveh	2,000	12 Oct 81
Bandar Abbas	3,000	27 Jun 81
Pishva	1,000	31 Oct 81
Shahriar	1,000	31 Oct 81
Khomeyn	3,000	31 Oct 81
Farsan	1,000	26 Aug 81
Mehdishahr	1,000	27 Jul 81

Distribution of Numbers of Provincial Capitals
(Automatic Telephones)

Province	Operational in Aug-Sep	Operational in Sep-Oct
City of Tehran	1,197	22
Tehran Suburbs		77
Central	13	12
Gilan	172	16
Mazandaran	431	
Eastern	59	
Western	0	
Kermanshah	516	75
Khuzestan		
Fars	234	334
Kerman	5	66
Khorasan	378	565
Esfahan	372	
Sistan	768	
Kordestan	0	
Hamadan	14	
Chaharmohal	303	528
Lorestan	30	8
Ilam	0	
Kahkiluyeh	9	
Bushehr	42	96
Zanjan	78	97
Semran	702	
Yazd	299	122
Hormozgan	4	
Total	5,598	1,871

Installation of Cable Network

Percentage of Progress		Date of Beginning	Schedule	
Total	This Month		Kind of Project	Center
100	3		Distribution of 100 numbers	Industrial City of Saveh
100	8	Nov-Dec 79	500 numbers	Kermanshah
100		Apr-May 79	Establishment of 1,000 nos	Natanz
100		Jan-Feb 80	200 nos	Bampur
100	40	Apr-May 81	Distribution of 200 nos	Mehdishahr
100	40	May-Jun 81		Ashkzar
50	50	May-Jun 81	Distribution of 300 nos	Zarraj

9593
CSO: 5500/5312

BRIEFS

ERICSSON TO MODERNIZE PHONE NETWORK--LM Ericsson is currently receiving an increasing number of orders. On Monday, LM Ericsson announced a contract with the postal and telephone service of Iraq. It will be the largest network expansion in the country's history and the contract is worth 1 billion kronor. LM Ericsson was granted the contract over competing bids from the other large telecommunications companies throughout the world. The contract is for expansion of the telephone system in Iraq for 750 million kronor in the first phase, with planned expansion for an additional 250 million kronor. Of this sum, 300 million will be used to purchase material in Sweden, primarily cable and network material. In this way, the work in Iraq will increase employment for LM Ericsson in Sweden. LM Ericsson is now extremely active throughout the Middle East. LM Ericsson has accumulated large resources there in recent years. Iraq is seen as a good market that can be further developed. [By Uno Skold] [Text] [Stockholm SVENSKA DAGBLADET in Swedish 27 Oct 81 p 26] 9336

CSO: 5500/2054

CORRESPONDENT REPORTS ON ECOWAS TELECOMMUNICATIONS MEETING

London WEST AFRICA in English No 3356, 23 Nov 81 p 2767

[Text] THE fifth meeting of the ECOWAS Telecommunications sub-commission was a joint meeting with the Pan African Telecommunications Union (PANAFTEL) at the Bintumani Conference Centre in Freetown.

The meeting examined issues on harmonisation of telecommunications and tariff procedures in the sub-region, and discussed telecommunications statistics as well as ways and means to avoid duplication of telecommunications programmes in the sub-region.

The meeting also discussed the national telecommunications programmes of member states, Phase II of the ECOWAS telecommunications project, the Transport and Telecommunications Decade in Africa; maintenance and operation of telecommunications networks in West Africa and co-operation among training centres in the sub-region.

In his opening address, Sierra Leone's Minister of Transport and Communication, Mr. S. A. J. Pratt spoke of the importance of co-operation in training.

He said that improving telecommunications systems between African countries, particularly member states of ECOWAS, was of paramount importance in the economic, cultural and social development of the community.

The Deputy executive secretary of ECOWAS, Dr. D. T. Sakho, said that the ECOWAS sub-commission on telecommunications was responsible for implementing the PANAFTEL project with the member states of the community. He warned, however, that considerable efforts needed to be made to improve the quality of services and equipment. He stressed the need for closure co-operation between the telecommunications sub-commission and the ITU and suggested that regional units within the community should be set up.

Dr. Sakho also emphasised the need for the training and stressed that the proposed telecommunications programme can only develop if properly trained manpower is available to set up and maintain the equipment.

The ITU representative, coordinator of PANAFTEL, presented the meeting with the latest information on the telecommunications programme. The need for a routine plan for telex services was stressed, taking into consideration the growing number of telex exchanges in the sub-region.

A document from the ECOWAS secretariat on the progress of the telecommunications programme raised a number of issues relating to, among other things, the programme's timetable, especially the construction of technical buildings and access roads. A questionnaire is to be sent to the various administrations to obtain the necessary information that could help the executive secretariat in decentralising certain activities to the advantage of these administrations.

The administrations have been asked by the executive secretariat to apply the ECOWAS telephone tariffs calculated on the basis of accounting rates adopted, and to keep as much as possible to the ECOWAS routine plan. The CITT/TAFF group was asked to organise a meeting to plan for harmonising the pricing policies of the different sub-regions in Africa.

A representative from the ECA presented a report on the telecommunications projects in the first phase of the Transport and Communications Decade in Africa, and what the ECA has been doing to raise

the necessary funds for the projects.

The representative from PATU told the meeting about studies being carried out by PATU on the possibility of using a regional satellite for telecommunications in Africa.

The meeting emphasised the need for coordination among the various organizations concerned with this project to avoid waste of effort and resources and strongly urged the Telecommunications Authorities of all member states to make sure they had paid their contributions to the Special Telecommunications Fund before June 30 next year.

CSO: 5500/5646

ESTABLISHMENT OF INDIAN OCEAN PRESS AGENCY

Port-Louis LE MAURICIEN in French 15 Sep 81 p 4

[Text] A new press agency: the LETTRE DE L'OCEAN INDIEN, or the INDIAN OCEAN NEWSLETTER, will soon be set up. As its name indicates, the agency will only deal with information concerning the Indian Ocean and foreign events relating in some way to that part of the world. One of the promoters of the project is Maurice Botbol, who will be the editor in chief of the LOI. Botbol knows the region well, having served as a newsman for the QUOTIDIEN DE L'ILE DE LA REUNION.

The agency will be based in Paris, but it will have a network of correspondents in almost all the Indian Ocean countries: South Africa, the Comoro Islands, Djibouti, Ethiopia, Kenya, Madagascar, Mauritius, Mozambique, Reunion, the Seychelles, Somalia and Tanzania. The LOI correspondent in Mauritius will be Sydney Selvon, information editor for LE MAURICIEN.

LOI will publish its dispatches every week. The first issue will appear on 30 October. It will be preceded by a 0 issue on 25 September. The LETTRE will carry information concerning diplomacy, politics, strategy and economics in the Indian Ocean, but it will also publish news on important cultural events or international trade union meetings held in the countries mentioned above.

The LETTRE will be published in English and French. It will have information such as important speeches by chiefs of state, diplomatic transfers, cabinet shakeups or the travels of members of the government abroad, and so on. It will also publish reports on specific subjects.

In the beginning, LOI will be a publication with a limited circulation, addressed to high political, economic, diplomatic and military officials. However, given the increasing importance of this part of the world, it will be called upon to extend its activities and touch other countries outside the region.

LOI therefore fills a gap. In fact, a citizen of a country on the Indian Ocean knows more about what is happening in London or New York than in the capital of a neighboring country because of the fact that information circulates poorly between countries in the region. It is therefore this role that LOI intends to play. Inasmuch as the nations on the Indian Ocean constitute a strategic and geopolitical entity, their importance will soon be realized, no matter what their size or the number of inhabitants they have.

11,464
CSO: 5500/5642

BRIEFS

BOTSWANA-ZIMBABWE-ZAMBIA TELECOMMUNICATIONS LINK--The government has allocated 45 million kronor for Swedish-Norwegian joint financing of a telecommunications link from Botswana through Zimbabwe to Zambia. The telecommunications link will both coordinate the local telecommunications networks of the three countries and connect them to the remaining African network. In addition, calls abroad will no longer have to be connected by way of South Africa. Several Nordic electronics firms will be involved in delivering the system. [Text] [Stockholm SVENSKA DAGBLADET in Swedish 6 Nov 81 p 26] 9336

CSO: 5500/2055

DETAILS OF MODERNIZATION OF TELEPHONIC NETWORK

Niamey SAHEL HEBDO in French No 295, 23 Nov 81 p 11

[Article by Abdou Seydou]

[Excerpts] In Niger, with the establishment of the OPT [Postal and Telecommunications Office], telecommunications have played a role whose importance no longer has to be demonstrated. With the economic boom it is experiencing, Niger needs means of communications, which go along with its development.

Consequently, substantial resources are being marshaled in order to fulfill these needs and modernize the telephone system.

Following the installation of the CNT (National Transit Center), another center is now in the process of being set up: the CTI (International Transit Center).

According to the director of telecommunications, Abba Mamadou, the CTI will be called upon to handle international communications in transit, whether they come from at home or abroad.

Initially, any user who would like to place a telephone call to another country will go through a so-called national center (CNT) and then through the CTI, because the latter has automatic connections with the outside.

Work that has begun on the center is being completed and is proceeding normally. Speaking of financing, Abba Mamadou reported that the center is the entire responsibility of the OPT but that there are also other sources of outside financing in the form of loans contracted for with certain organizations such as the National Savings Bank.

Naturally, like any newly formed department, upper-level personnel are needed to make it operate.

On this subject, the director of telecommunications states that technicians are being trained. Five are now being trained with the builder and will return to observe technical installation work. They are actually technicians already trained at the different centers in the country and who have some technical experience. According to the director, this is a kind of special training program to teach them the new equipment.

With the CTI, our telephone dependency on other countries will be reduced to a minimum, which enables us to open up relations with any country in the world without being forced to go through another. In other words, Abba Mamadou says, we shall enjoy autonomy in the opening of direct automatic relations.

This is also an advantage for the user who would like to place a telephone call abroad, for he will reach his party easily.

In the initial phase, there will be about 100 circuits, based on the specific needs to open relations with the different countries, the director added. However, there is a possibility of expanding circuits as traffic grows.

Along with the CTI, the OPT is in the process of building up the domestic system, commonly called the CTN (National Transit Center). This center has existed since 1974 and is in operation. Initially, the CTN will make it possible to install telephone connections with all departmental capitals. This has just been done, moreover, inasmuch as for some time now, the departments of Diffa and Agadez have been automatic.

General automatization is now in the works. The new Zinder central will begin to operate in about two weeks.

Concerning the Department of Diffa, the new central has been installed. It is an automatic central for local subscribers and also for interurban use. This connection is related to the PNTT (Domestic Satellite System), which is also being built. This project is in the very advanced stage.

Thanks to the CTN, the entire country will be covered, but priority will first of all be given to connecting the departmental capitals with the national capital by the automatic system.

Concerning the other centers (Dosso and Tahoua), the director of telecommunications said that they are being set up. With respect to the second phase, the OPT will attack the problems of the districts, whose telephone network will be hooked up the the automatic national system. Abba Mamadou added optimistically that these objectives will be attained by April 1982, with respect to automatic connections with departmental capitals and automatic international connections.

In short, a large part of our country will be covered by a modern telephone system by 1982.

11,464
CSO: 5500/5640

BRIEFS

SATELLITE TELECOMMUNICATIONS NETWORK--The Nigerien Postal and Telecommunications Office (OPT) has entrusted the construction of an important telecommunications network to Thomson-CSF [General Radio Company] and Telspace (an economic association made up of Thomson-CSF and CIT [expansion unknown]-Alcatel), which will act as project foreman. The Nigerien minister of telecommunications recently signed the contract for the project in Paris. The network will improve international telecommunications service and open up areas as yet poorly served. For the Postal and Telecommunications office, Telspace will supply a Standard A earth station (antenna diameter 32.5 meters), connected with an Intelsat satellite over the Atlantic Ocean, and four national earth stations with 11.8-meter antennas, located at Agadez, Dima, Bilma and Diffa. With regard to Thomson-CSF, a 275-kilometer microwave connection will link Agadez and Arlit with a series of crossovers serving the different mining areas. The Niger Radio and Television Broadcasting Office (ORTN) will have four transmitters supplied by Thomson-CSF. These four television transmitters will equip Agadez, Bilma and Diffa, while a relay station will be set up at In Gall. The contract also covers construction of technical buildings and housing. In cooperation with TDF (French Television) and France Cable and Radio, SOFRECOM [presumably French Communications Company] will do the general study. The network will be a "turnkey" operation, with most of the program to be completed between March and September 1981 [sic], at an investment cost of 13.8 billion CFA francs. [Text] [Niamey LE SAHEL in French 14-15 Nov 81 p 3] 11,464

CSO: 5500/5642

BRIEFS

NEW LAGOS TV STATION--The Vice-President, Dr Alex Ekwueme, said in Lagos on Sunday that the new television station in Lagos State is not a substitute for the state government television station.' The vice-president, who was speaking while commissioning the Nigerian Television Authority (NTA) Channel 7, situated at Tejuosho area of Surulere in Lagos, said that the TV station was established to cater for the local community and interests in the state. He said: 'Channel 7 has a duty to inform the people of Lagos State about the programmes and activities of the state government. It also has the responsibility of educating the state on its position in the scheme of things at the national level.' Dr Eukwueme said that this explanation had become necessary in order not to confuse NTV Channel 7 with the on-going debate on allocation of television wavelengths. He disclosed that President Shehu Shagari had authorised the state government to transmit on VHF Channel 8 temporarily pending when it would instal appropriate equipment for use on its VHF 35. Dr Ekwueme also said that Channel 8 would be taken over by NTA at negotiated price at the end of one year, and that the NTA Channel 10 now located in Lagos would move to Abuja when the federal capital finally moved there. [Text] [Kaduna NEW NIGERIAN in English 29 Sep 81 p 1]

GONGOLA RADIO STATIONS--Gongola State Government is to provide 3.3 million Naira for the building of five broadcasting stations to improve the state broadcasting station, the state's Commissioner for Internal Affairs. Mrs Fibi Nadah, said in Yola. In an interview with the NEWS AGENCY OF NIGERIA (NAN), she said that the proposed station would be located at Yola, Jalingo, Hung, Wukari and Bali. She regretted that only a small per cent of people in the state presently received the programmes transmitted by the state broadcasting corporation. The commissioner also said that eight members of staff of the broadcasting station were already on training on how to operate and maintain the new stations. Mrs Nadah further said that a generating plant had been installed at the corporation at the cost of ₤2,000 Naira to forestall failure in transmission. (NAN). [Text] [Kaduna NEW NIGERIAN in English 7 Oct 81 p 10]

'NAN' INDEPENDENT NETWORK--The general manager of the NEWS AGENCY OF NIGERIA (NAN), Mr Onaora Nzekwu, said in Jos at the weekend that the agency will instal an independent communication network to ensure quick reception and transmission of news to its subscribers in all the states of the federation. Mr Nzekwu told members of the management staff of Radio Plateau and the Nigerian Standard publication that installation of communication facilities had been completed in

some states. He said with the new transreceiver equipment, services would be made available to its subscribers through its state offices or the Posts and Telecommunications distribution lines. Mr Nzekwu said the agency being a commercial organisation, couldnot afford to be partisan and run the risk of losing its numerous subscribers of different political leanings. He said, however, that NAN subscribers were free to commission the agency to conduct special research which would be made available exclusively to them. He added that the agency was not established to make other media organisations fold up, but to deliver local, national and foreign news at their doorsteps at faster and cheapter rates.
The secretary to Radio Plateau, Mr John Amadi Damshakal, commended the agency for its objective and accurate reporting, adding: "It is the only independent media organisation in the country." The acting general manager of the Standard Publishing Company, Mr George Ohemu, said most media houses in the country relied on NAN because of its high quality and unbiased reporting, but wondered why the features services of the agency was not as regular as its news service. (NAN) [Text] [Kaduna NEW NIGERIAN in English 19 Oct 81 p 17]

CSO: 5500/5645

DIOUF OPENS NATION'S PANAFTEL SECTION

Dakar LE SOLEIL in French 30 Nov 81 p 3

[Text] (APS)--The Senegalese section of the Pan-African Telecommunications Network has just been completed. It was officially opened in Tambacounda today by President Abdou Diouf.

Telecommunications play an increasingly important role in the development of nations. Senegalese authorities have understood this and consequently, after our country achieved independence and in coordination with other African nations, the Pan-African Telecommunications Network project was launched.

That project became a reality today, at least for Senegal, while waiting for the other countries involved (Mali, Upper Volta, Niger and Benin) to complete the rest of the system.

The project was made possible by financing from the governments of Canada and Senegal through the Canadian International Development Agency (ACDI) amounting to 13.2 billion CFA francs for the entire undertaking. The portion for Senegal's section amounted to nearly 2.5 billion CFA francs.

The Senegalese section is essentially in eastern Senegal and runs from Kaolack to Kidira. The choice was not accidental. It is part of the policy of the chief of state and the government to open up peripheral regions.

With the PANAFTEL network, the eastern axis of our country will be served by a high-quality system of transmission.

The people affected will henceforth have a large number of telephone circuits available to them. Even better, these PANAFTEL facilities help the automatization planned as part of the Sixth Economic and Social Development Plan.

There are other advantages, such as telephone service by branch lines to areas along the trajectory (Kaffrine, Koumpentoum, Birkilane, Goudiri, Koussanar, Koungheul and Balla).

There is a definite advantage to the PANAFTEL network as far as the continent is concerned. It will enable our country to communicate directly with other nations involved in the project without going through relays outside of Africa.

11,464
CSO: 5500/5641

SWEDISH GOVERNMENT PROPOSES A MODIFIED NORDSAT PLAN

Stockholm DAGENS NYHETER in Swedish 18 Nov 81 p 3

[Article: "Limited Nordsat"]

[Text] The Swedish government has decided to recommend limiting Nordsat primarily to television broadcasts in the Nordic countries. This was revealed by Prime Minister Thorbjorn Falldin on Thursday in Helsinki.

The Nordic culture ministers will meet on Monday next week to reach a decision on the Nordsat project. Falldin said he knew more or less how the various Nordic countries viewed the project. Both in his speech before the new Sweden-Finland Society and at the press conference Falldin stressod the value of a limited Nordsat.

On the eve of the Monday meeting of Nordic culture ministers it is hoped that a common Nordic policy may be reached so that the Nordic Council could make a final decision early next year.

Especially Norway, but also Denmark, have been for the Nordsat project, while Sweden has been divided and Finland has expressed strong reservations.

Falldin stressed that he has been critical of the original Nordsat project with seven or eight channels, since it was uncertain how they would be used and because it would be extremely expensive.

Psychological Significance

The proposal for a limited Nordsat which could be expanded gradually is a different matter, according to Falldin. Opinions have also varied within the Center Party. Falldin thought that now the party could agree on a limited project.

It is now clear that in the long run satellite technology will be used to transmit television and other telecommunications services, Falldin said in his speech. It would be unreasonable for five small Nordic nations to seek

their own national solutions.

"For this reason, I hope that the Nordic Council will proceed with a limited project which could have great psychological significance for Nordic cooperation in other areas as well," Falldin said.

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CSO: 5500/2055

NORDIC MINISTERS AGREE ON NORDSAT START

Stockholm DAGENS NYHETER in Swedish 24 Nov 81 p 6

[Article by Bo Engzell]

[Text] At a meeting in Copenhagen on Monday the Nordic Council of Ministers took another step up the ladder toward Nordsat. Denmark is still an uncertain factor, however. If Denmark chooses not to participate, the proposed Nordsat with direct broadcast of TV and radio programs could become a "four-man satellite"--at best.

What the ministers from four of the five Nordic countries--Finland, Norway, Iceland, and Sweden--agreed on Monday was to present a proposal at the Nordic Council meeting in Helsinki in March suggesting that development work on Nordsat begin immediately.

This would cost about 60 million kronor. In 2 years a final decision could be made on Nordsat.

At the ministers' meeting in September in Copenhagen, then Danish culture minister Lisa Ostergaard was not at all satisfied with the satellite plans, which she described as a "Swedish commercial hype." It is unknown whether she has changed her mind. She did not need to answer this question at the Monday meeting.

This is because the Danish government resigned and new elections are upcoming. It is the next government that must decide if Denmark will participate.

"As far as Denmark is concerned, the resolution of the Nordic Council will be discussed in the Folketing, Denmark's parliament, which has the final word," Lisa Ostergaard said diplomatically.

Greater Optimism

She indicated in this way that much discussion remains in Denmark, which would prefer a large satellite, which would cost 2.5 billion kronor.

If Nordsat now comes into existence--and optimism has increased considerably--the cost of Nordsat and the first Tele-X that Norway and Sweden have agreed on would be significantly lower.

Tele-X would appear first. It represents a concentrated effort in data transmission and telecommunications (normal telephone calls, but also features such as ship-to-shore calls and long distance calls to trucks). Tele-X could also transmit two TV channels. In that case, the Nordic countries must agree on broadcast times and responsibilities.

If Nordsat then becomes a reality, it could appear several years after Tele-X, which would then be converted to a backup satellite. The number of TV channels in Nordsat would be increased gradually. In this way, the problem of advertising could be avoided. This has been a serious problem for Finland. It has been agreed that advertising would be prohibited. The original goal is five TV channels, one for each Nordic country.

Little Time

There is little time. TV satellite broadcasts from other European countries will begin in several years. We estimate that we will have a satellite in orbit around 1986. Authorities and individuals in southern Denmark, especially, believe that we must hurry.

West German television is already intruding in that area, which now has a foretaste of what to expect when the large European satellites are ready to broadcast in the near future.

Tele-X, the Swedish-Norwegian program, which probably will include Finland to some extent, will provide an estimated 200 jobs in Sweden.

"Most of the new jobs will involve satellite tracking," said Thomas Sidenbladh of the Industry Ministry. This includes the manufacture of computers, remote control systems, and much more."

"Without Tele-X we in the Nordic countries would be incapable of constructing Nordsat," Culture Minister Jan-Erik Wikstrom said. "As far as Sweden is concerned, satellites are an absolute must if we--and the other Nordic countries--are not to fall behind and suddenly one day find it impossible to compete on the international market."

Decisions concerning Nordsat are important for the labor market and for new jobs.

9336
CSO: 5500/2055

SWEDISH PAPER BACKS REVAMPED NORDSAT PLAN

Stockholm DAGENS NYHETER in Swedish 23 Nov 81 p 3

[Editorial: "New Satellite Model"]

[Text] According to plans, a decision on the Nordsat TV satellite was to be made in principle this fall. Only a few days before the Council of Ministers met, however, the Swedish government decided to present an entirely new model, a reduced project with two or three TV channels instead of Nordsat's seven or eight. It was announced on Saturday that Finland recommended the Swedish compromise proposal.

How the details of this plan, which was given the working name Nordcom, are to be worked out is still not clear. It is difficult to say whether this is an actual alternative that reflects the negative criticism that has arisen or if it is a way to avoid a rabid debate and, in an underhanded fashion, introduce a TV satellite that differs from Nordsat primarily in name only.

It is clear that the plan proposes to use a separate satellite the same size as Nordsat. Thus, the plan rejects the use of the experimental Tele-X satellite, which also has space for TV transmission equipment.

Of course, the most important question is how the transmission equipment is to be utilized. So far it has been assumed that the Nordic TV channels would be transmitted uncut. If the capacity is now decreased, some sort of selection must be made. The most appealing alternative would be a joint Nordic channel, independent of the national TV companies. This would be an innovation and a much needed stimulus. Better than any number of satellite broadcast national channels, it would promote the goals that have been set for Nordsat: an increased spirit of Nordic community and improved linguistic understanding among sister nations.

9336
CSO: 5500/2055

MP QUESTIONS TELECOMMUNICATIONS AGENCY REMAINING MONOPOLY

Stockholm SVENSKA DAGBLADET in Swedish 30 Oct 81 p 2

[Commentary by Anders Bjorck, Conservative Party Member of Parliament]

[Text] For several decades the Telecommunications Service has had clearly defined tasks, primarily to manage the Swedish telephone network.

Even those who are against monopolies of various types must admit that this has been a practical solution to the problem of providing Sweden with an efficient telecommunications network.

Now, however, new technical innovations offer us a number of services to which we are unaccustomed. Data communications, mobile radios, telefax, and many other devices are already available and will undergo rapid development during the 1980's.

Is it reasonable, then, as the Telecommunications Service assumes, for this agency to have a monopoly in practice on all new services? Is it reasonable for this agency, even though it might refrain from entering certain markets it finds to be of little interest, to determine who will be allowed to do what? Should the Telecommunications Service grant type approval to its competitors' products, rather than having this done by an impartial agency, for example the National Institute for Materials Testing?

The answer must be an unequivocal no.

The recent Comvik affair is an excellent illustration of the monopolistic tendencies of the Telecommunications Service. The fact that various representatives of the service have publicly denied that it has monopolistic tendencies has not made matters better. By its actions, the Telecommunications Service has shown repeatedly that it is concerned primarily with its own interests.

The Comvik case not only points out how fundamentally unreasonable it is for an agency to have a monopoly on new services and new technology, but also

shows how greedily and clumsily a state agency can act.

Comvik has permission to operate mobile telephones, i. e. telephone connections from cars, etc. Now the Telecommunications Service says that Comvik actually has permission only to operate with manual telephone connections and maintains that the company's system is actually automatic!

A study of the documents in this case reveals--at least to a nontechnician--that the system actually is manual, since it requires the assistance of a telephone operator. But is this really the decisive point?

Should a company be punished because it has good, even completely automatic, products?

Should the Telecommunications Service have the right to stop competitors who offer customers modern equipment?

Should Swedish business be prevented from buying the best possible equipment, simply to satisfy the monopolistic designs of a state agency?

Several years ago, then communications minister Ulf Adelsohn presented a proposal which parliament approved to ease the monopoly of the Telecommunications Service in various fields. This was a step in the right direction. The Comvik case, however, has shown that it was insufficient.

In order for Sweden to compete successfully in electronics and other fields, free competition must exist and individual companies must be given a reasonable opportunity to work. It is intolerable for a state agency to threaten simply to cut off a system that it does not like.

We need a quick review of the Telecommunications Service's monopoly. Type approval should be transferred immediately to the National Institute for Materials Testing. The Constitution Committee in parliament should follow the Comvik affair closely--after all, the Communications Ministry under Claes Elmstedt is intimately involved--to see that it is handled in accordance with existing regulations and good administrative practice.

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CSO: 5500/2054

BRIEFS

TELETEXT EQUIPMENT AGREEMENT--Facit and LM Ericsson have reached an agreement on the development and production of teletext equipment. The companies will coproduce an entirely new product: Eritex 10, based on a special version of Facit's new 8110 word processor. It will be manufactured at Facit's plants in Svangsta. The Eritex 10 will be a communicating text and word processing machine which will be part of Ericsson's major venture into the field of office automation. Facit, which in this way will enter a rapidly expanding market, will also sell the equipment through some of its subsidiaries. [Text] [Stockholm SVENSKA DAGBLADET in Swedish 27 Oct 81 p 26] 9336

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